ACHIEVING A SOUND DOMESTIC WOOL INDUSTRY

A Report to

the President of the United States

from the

Secretary of Agriculture

Prepared by an
Inter-agency Wool Study Group
in the
Department of Agriculture

United States Department of Agriculture
Washington, D. C.
December 1953

LETTER OF TRANSMITTAL

Department of Agriculture
Washington, December 28, 1953

Dear Mr. President:

I am transmitting herewith a report on the factors currently affecting United States wool production and requirements for the development of a sound and prosperous domestic wool industry while permitting an expansion in foreign trade. This study has been undertaken in accordance with your request of July 9, 1953.

This report analyzes the need for, and methods of achieving increased efficiencies in production and marketing to enhance the competitive position of sheep and wool as a farm and ranch enterprise; increased efficiencies in processing and distribution of wool and woolen products, and improvements in the quality of end products to enhance the demand for and the competitive position of wool; and types of price or income assistance to domestic growers. The conclusions are not presented in the form of recommendations. Rather the effort has been to set forth the facts and questions, and the probable effects of alternative courses of action which must be considered in the development of an improved wool program.

It is my hope that this study will be useful to you and to others, including the Congress and the appropriate policy officials of the Government, who are interested in developing a sound and prosperous domestic wool industry and an expanding foreign trade.

Respectfully,

Secretary

The President,
The White House

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SUMMARY

Despite our efforts to encourage sheep and wool production through both the tariff and loan and purchase programs for wool, sheep and wool production have remained relatively unattractive compared with alternative farm and ranch enterprises.

An unprecedented decline in sheep and wool production has occurred since 1942 because of: (1) A scarcity of competent labor; (2) low returns from lambs and wool and high risks compared with cattle; (3) inability to increase production efficiency as in other enterprises; (4) uncertainties as to the future levels of tariff protection, price support operations and public land grazing allotments; (5) increased competition from imported wool and synthetic fibers; and (6) drought, especially in the Southwest.

Consumption of apparel wool in the U. S. has fallen from postwar levels because of: (1) The abnormally high level of consumption immediately following the war; (2) a trend toward lighter weight clothing; (3) increased competition from budgetary items other than clothing for the consumer's dollar; and (4) increased competition from other fibers, particularly man-made fibers. Per capita consumption of apparel wool currently is about at prewar (1935-39) levels.

We are now importing about 5 times as much apparel wool as we did prewar largely because of the drastic decline in domestic production. In the prewar period, 1935-39, we were producing nearly three-fourths of the apparel wool consumed in this country. In contrast, current production of domestic wool is about a third of our apparel wool consumption. It is little more than 40 percent of our annual military requirements during World War II.

World production of wool outside the United States, in decided contrast to the situation in the United States, has been at high levels since the end of World War II. World production currently is at record levels. There has been some accumulation of stocks recently in Government hands in the United States and the United Kingdom. Otherwise, world production and consumption appear to be fairly well in balance. A heavy postwar demand provided an outlet between 1946 and 1950 for the 15 billion pounds of apparel wool produced during that period, and for more than 3 billion pounds of wartime stocks.

Domestic problems have resulted from our efforts through price support programs to check the downward trend in domestic production. Stocks of domestic wool are accumulating in CCC hands while increasing amounts of imported wools are being consumed. This is because duty paid prices of some imported wools have been lower than the price support levels required by current legislation for comparable domestic wools. In such a situation, current legislation requires action to limit imports and this, in turn, tends to create problems in international trade.

Despite price supports, domestic growers' prices remain low relative to their costs and risks, and sheep and wool production remain unattractive compared with alternative enterprises. This experience in attempting to check the downward trend in production raises the question of the level of domestic sheep and wool production needed and how best to achieve it without interfering with foreign trade.

A moderate increase in domestic sheep and wool production is suggested in light of (a) available feed resources for an expansion in sheep numbers, (b) our need for all the lamb and wool we can produce, and (c) the desirability of reducing our dependence on foreign sources of wool in times of emergency. It is important, however, that an increase in sheep and wool be accompanied by the achievement of sufficient improvements in the cost and quality of lamb and wool products to enable them to compete for the consumer's dollar without undue increases in subsidies. Current production is about 200 million pounds. The legislative goal established in the Agricultural Act of 1949, as amended, is 360 million pounds.

A moderate increase in domestic consumption of wool is essential if both an increase in production and an expansion in foreign trade in wool are to be achieved. Increases in production will come slowly. Meanwhile, our population is increasing. Hence, a very moderate increase in per capita consumption would permit an expansion in production and in imports without an increase in domestic stocks.

Action Needed

Development of a sound and prosperous domestic wool industry will require (1) increased efficiencies in production and marketing to enhance the competitive position of sheep and wool as a farm and ranch enterprise; (2) increased efficiencies in processing and distribution, and further improvements in the quality of end products to enhance the demand for and the competitive position of wool compared with other fibers; and (3) a continuation of some type of price or income assistance to domestic growers to enable them to compete with imported wools.

Increased efficiencies in production and marketing could be achieved with increased adoption of known improved practices and with the development and adoption of other improved practices. Significant increases in efficiency and quality of wool production could be achieved by wider adoption of known methods of:

(1) Treatment of parasitic and infectious diseases of sheep;

(2) Use of improved breeds of sheep and improved breeding practices;

(3) Adoption of improved farm and ranch management practices including conservation programs to increase the carrying capacity of grazing lands and the administration of public lands to assure their full utilization within their sustained carrying capacity and stability of operations on the ranches using them;

(4) Improving the preparation and packaging and selling procedures of grease wool.

Additional research which would be especially fruitful in increasing the efficiency of production and marketing would include work on:

(1) Treatments for controlling such diseases as vibrionic abortion and the new virus disease, blue tongue;

(2) Nutrition problems;

(3) Adaptation to sheep and wool production of technological developments found profitable by other segments of American agriculture; and

(4) Development of standards for such qualities of wool as color, strength, crimp, etc. to facilitate selling wool on the basis of description.

A much more vigorous educational program is needed to inform producers of the urgent and increasing need for the adoption of improved production and marketing practices and for improvements in both the quality of product and its acceptability to processors and consumers. Direct interest in domestic wool rests primarily with the wool growers and they must provide much of the initiative and leadership for such programs.

Increased efficiencies in the processing and distribution of domestic wool and its end products, and improvements in the quality of woolen products which would enhance the demand for, and the competitive position of wool could be achieved by:

(1) Development of chemical treatments to improve the felting characteristics of wool, increase the resistance of wool products to shrinkage during cleaning, provide permanent resistance to insect attack, decrease the retention and facilitate the removal of soil, and reduce scratchiness during wear;

(2) Improvement in the blending qualities of wool and the development of superior blends of wool and other fibers;

(3) Development of improved methods of recovery of, and more profitable uses for unutilized or partially utilized byproducts;

(4) Increased use of modern machinery, better organization of processing operations, improved working conditions, and more efficient utilization of plant facilities;

(5) Improved styling and construction of apparel and household products made of wool or wool blends; and

(6) Increased education of consumers regarding the quality, variety, and adaptability of products made of wool or wool blends.

Price or income assistance to growers can be provided in a number of ways but continuation of some type of assistance is essential, whether it be by tariffs, loan and purchase programs, wool payments to growers, or some other type of program. Without it, further reductions in domestic sheep and wool production would be inevitable.

Any program adopted to provide price or income assistance to wool growers should, of course, be compatible with our overall farm policy as well as our international trade policy. The Secretary of Agriculture currently is engaged in a careful study of the entire farm program to determine the type of program or programs which would best contribute to the welfare of the country and of the agricultural economy. Attention is being given to various methods of achieving the objectives of the agricultural program. Conclusions reached in that comprehensive analysis will have an important bearing in the determination of methods best suited for providing price assistance to wool growers.

Alternative methods of providing price assistance are limited for the present by existing legislation. Application of import fees, in addition to prevailing tariffs, on all apparel wool and wool tops imported for consumption has been recommended in accordance with the provisions of Section 22 of the Agricultural Adjustment Act, as amended. However, since increased import fees over an extended period likely would affect adversely both international trade and the competitive position of wool in relation to other fibers, other methods of providing price assistance should be adopted for the long run as quickly as possible.

The methods which have been suggested for providing continuing price or income assistance over the long run generally fall into two groups: (1) Tariffs or import fees, quantitative restrictions on imports, and government loan or purchase programs, all of which would seek to support the level of wool prices in the market; and (2) direct payments to producers which would be used when necessary to increase growers' returns by supplementing the prices received in the market.

Some of the major effects of various methods proposed for providing price or income assistance to wool growers are discussed in the concluding section of this report. It is important to note that the merits of each proposal depend upon both the method and the resultant levels of import barriers and of domestic wool prices to mills and to consumers. Programs which increase import restrictions tend to affect international trade. And, in the long run, programs such as increased tariffs or processing taxes which increase the cost of wool to mills will tend to detract from the competitive position of wool in relation to other fibers. Because of the pyramiding of costs all the way to the consumer, additional costs paid by consumers for woolen products under such programs tend to exceed the combined returns to producers and additional tariff or processing tax revenues accruing to the Government. Conversely, programs which lower costs of wool to mills tend to improve the competitive position of wool and benefit consumers.

ACHIEVING A SOUND DOMESTIC WOOL INDUSTRY

INTRODUCTION

Domestic wool production is only one-third of domestic wool consumption. Yet a substantial portion of the domestic wool clip is going to CCC under the price-support program while an increasing proportion of wool consumed consists of imported wools.

Section 22 of the Agricultural Adjustment Act of 1933, as amended, provides that whenever the Secretary of Agriculture has reason to believe that imports of a commodity are materially interfering with any loan, purchase, or other program of the Department of Agriculture with respect to that commodity or product thereof, or are reducing substantially the amount of any product processed in the United States from that commodity or product thereof, he shall so advise the President, and, if the President agrees that there is reason for such belief, the President shall cause an immediate investigation to be made by the United States Tariff Commission. President Eisenhower has directed the United States Tariff Commission to make such an investigation on wool. 1/ At the same time, the President requested that the Department of Agriculture analyze the factors retarding United States wool production and make "suggestions which will promote the development of a sound and prosperous domestic wool industry and at the same time permit an expanding world trade." 2/

This is a report of the Department of Agriculture on the study requested by the President. It reviews recent trends in domestic production, marketing, and consumption of wool, causes for the decline in production, current supply-demand relationships and price-support programs, world-supply demand trends, and suggests steps to be taken to promote a sound and prosperous domestic wool industry. Because they represent the more pressing problems of the industry, primary emphasis is placed upon the problems of wool rather than lamb and mutton. Emphasis also is placed upon both the opportunity and the responsibility of the various parts of the industry, from the grower to the retailer, to take the steps themselves which are necessary to assure a sound and prosperous domestic wool industry. 3/

1/ Letter of July 9, 1953 from President Dwight D. Eisenhower to Chairman Edgar B. Brossard, United States Tariff Commission.

2/ Letter of July 9, 1953 from President Dwight D. Eisenhower to Secretary of Agriculture Ezra Taft Benson.

3/ Technicians in the Department of Agriculture who contributed significant portions of this report include: Dr. W. M. Scott, Bureau of Agricultural and Industrial Chemistry; Dr. Hugh C. McPhee, Bureau of Animal Industry; Albert M. Hermie, Dr. L. D. Howell, and H. L. Stewart (Chairman) Bureau of Agricultural Economics; Walter L. Hodde, Farm Credit Administration; Eugene T. Ransom, Foreign Agricultural Service; F. W. ImMasche, John A. Goe, and Grover Sims, Livestock Branch, Production and Marketing Administration; Saul N. Katz and Sidney N. Gubin, Office of Price, Production and Marketing Administration.

PART I - DOMESTIC TRENDS

TRENDS IN PRODUCTION OF SHEEP AND WOOL

Domestic wool production is far short of total domestic consumption at a time when surplus problems are paramount with a number of other agricultural commodities. Whereas production of most other major agricultural commodities increased materially in response to abnormal war and post-war demands, sheep and wool production have been curtailed drastically since 1942.

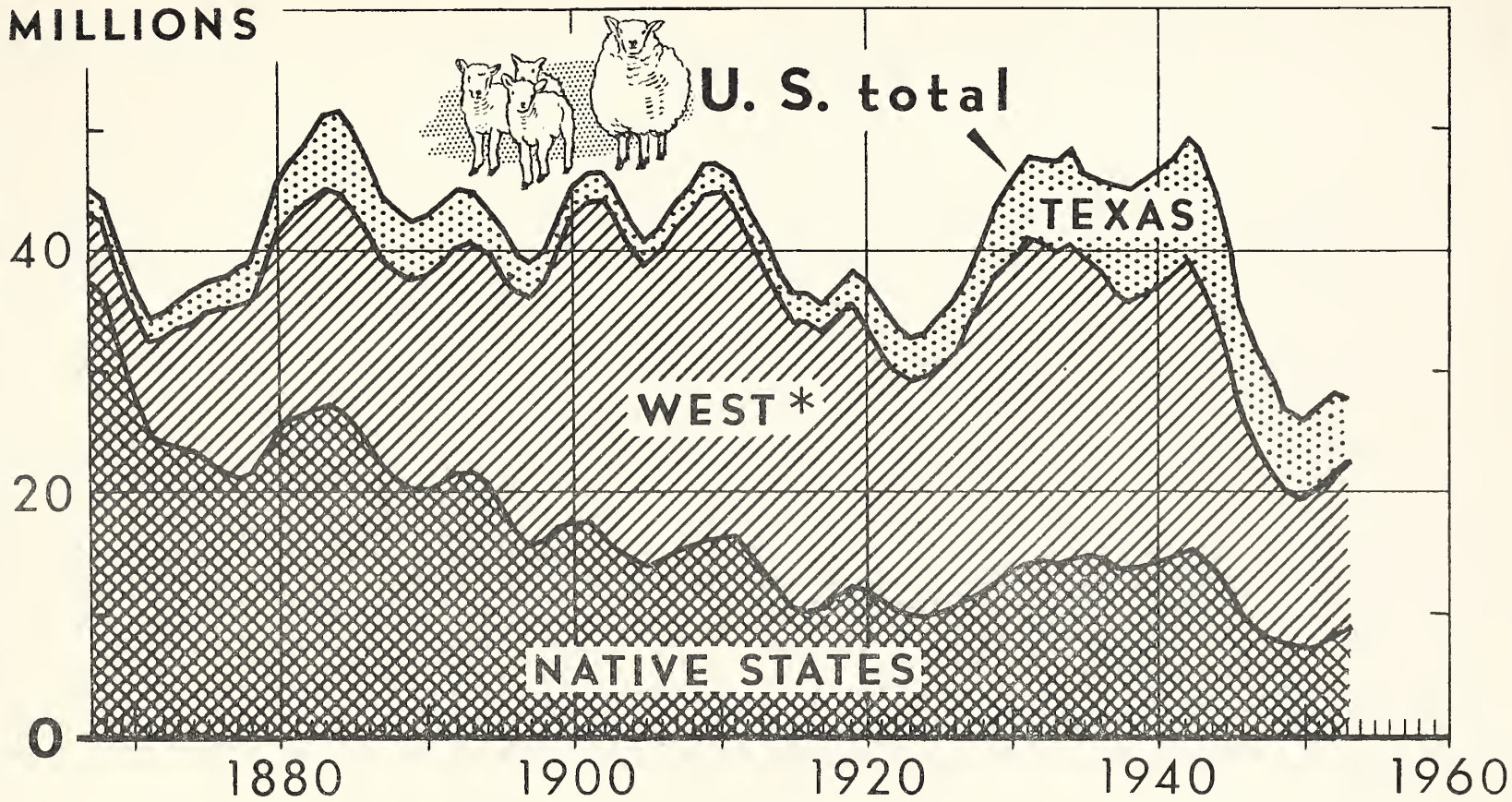
Numbers of sheep and shorn wool production have gone through several production cycles of varying length since 1884 when, with about one-third our current population, we were producing nearly a third more wool than we are today. Numbers of sheep have increased and decreased cyclically in response to prices and feed conditions. The most drastic decline in history, however, was that from 1942 to 1950 when, in a period of only 8 years, numbers of stock sheep and lambs fell from the near record level of over 49 million head to the record low level of only 26 million. (See Appendix table 1.) Sheep numbers increased slightly during 1950 and 1951, but they declined again in 1952 and some further decline is expected in the current year (fig. 1).

Shorn wool production has tended to vary with numbers of sheep on farms and ranches, whereas pulled wool production has varied with changes in the slaughter of sheep and lambs. Since about four-fifths of our wool is produced as shorn wool, total wool production has varied with numbers of sheep. It has varied from a high of nearly 221 million pounds (scoured basis) in 1942 when numbers of all sheep and lambs were at record levels, to a low of 119 million pounds in 1950 (table 1). It was 127 million pounds in 1952, including 102 million pounds of shorn wool (232.4 million pounds grease basis) and 25 million pounds of pulled wool (33.6 million pounds as pulled).

Significant changes over the years include changes in the location and associated changes in the nature of our domestic sheep industry, an increase in fleece weights, and an increasing proportion of farmers' and ranchers' returns from, and hence in their emphasis on lamb and mutton production rather than wool. During the 1880's more than one-half of the 46 million head of stock sheep on U. S. farms and ranches were located in the native or farm flocks States, but by the 1930's when there were again about 46 million head of stock sheep on all farms and ranches, about 70 percent of them were in the 13 range sheep States. 4/ From 1942, when 69 percent of the sheep shorn and 71 percent of the shorn wool produced were in these western range States, numbers of stock sheep in the native States and in the range States declined 50 percent and 45 percent respectively by 1950.

4/ Range sheep States include the 11 Western States, Texas and South Dakota. Native sheep States are all other States where sheep are produced, mainly under farm conditions.

STOCK SHEEP AND LAMBS ON FARMS JAN. 1



* 11 WESTERN STATES AND S. DAK.

DATA FOR 1953 ARE PRELIMINARY

U. S. DEPARTMENT OF AGRICULTURE

NEG. 47391-XX BUREAU OF AGRICULTURAL ECONOMICS

Table 1.- Wool production, United States, selected years 1900 to 1939, annual 1940 to 1952

Year	Shorn wool		Pulled wool		All wool
	Grease basis	Scoured basis 1/	As pulled	Scoured basis 1/	Scoured basis 1/
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
1900	260	114	29	22	136
1909	310	136	41	31	167
1923	230	101	42	32	133
1934	369	162	60	46	208
1937	356	156	66	50	206
1939	362	159	64	49	208
1940	372	164	62	46	210
1941	388	171	66	49	220
1942	388	171	67	50	221
1943	379	167	65	49	216
1944	338	149	73	55	204
1945	308	135	70	53	188
1946	281	124	61	46	170
1947	251	111	57	42	153
1948	232	102	47	35	137
1949	213	93	36	27	120
1950	215	95	32	24	119
1951	226	99	26	20	119
1952	232	102	34	25	127
1953 2/	229	101	-	-	-

1/ Rough approximation based on estimated average yield of 44 percent for shorn wool and 75 percent for pulled wool. These yields were determined in an analysis of the 1946 domestic clip. It should be recognized that yields (shrinkage) vary from year to year and over a period of time with areas, weather conditions, breed, and other factors.

2/ Preliminary.

Bureau of Agricultural Economics.

The decline in sheep numbers during the 1940's resulted primarily from farmers and ranchers getting out of the sheep business rather than merely reducing the size of their flocks. Whereas the number of sheep on farms and ranches declined about 42 percent between 1940 and 1950, reports of the Bureau of the Census indicate that the number of farmers and ranchers reporting sheep declined 46 percent. Census reports also indicate that the liquidation of sheep enterprises was greatest on farms with small flocks, most of which were in the native States. Between 1939 and 1949 numbers of farmers reporting less than 300 sheep shorn decreased 43 percent, those reporting from 300 to 999 decreased 39 percent, and those reporting 1,000 or more decreased 32 percent (table 2). These changes emphasize the importance of both the size of flock and of the western range States in appraising wool production potentialities. By 1949 some 90 percent of the farmers and ranchers reporting sheep shorn still had flocks of less than 100 each, but as a group they had only 26 percent of all sheep shorn. (See Appendix table 2.) At the same time only 20 percent of the farmers and ranchers reporting sheep shorn was located in the 13 range States, but they reported some 71 percent of all sheep shorn. Particularly important in appraising potentialities of sheep and wool production has been the increasing importance of Texas since the mid-twenties. Whereas 11 percent of the stock sheep and 9 percent of the breeding ewes (1 year old or older) in the United States were located in Texas in the period 1924-26, by 1950 about one-fourth of all stock sheep and more than a fifth of all breeding ewes were located in that one State.

Table 2.- Number of farms in the 13 range sheep States and in the native sheep States reporting sheep shorn, by size of flocks, 1939 and 1949

Number of sheep shorn per farm	Number of farms reporting					
	13 range sheep States		Native sheep States		United States	
	1939	1949	1939	1949	1939	1949
	Number	Number	Number	Number	Number	Number
Less than 300	79,131	48,853	406,347	226,270	485,478	275,123
300-999	8,770	5,323	1,618	958	10,388	6,281
1,000 or more	5,898	3,993	200	137	6,098	4,130
All farms	93,799	58,169	408,165	227,365	501,964	285,534

Bureau of the Census, 1950.

An increasing proportion of sheep in the range States together with improved breeding have resulted in a 20 percent increase in fleece weights since 1909, the first year of record. (See Appendix table 3.) Fleece weights in the 11 western States are averaging about 9 pounds each, or about one-fourth more than in the period 1909 to 1913. Fleece weights in the native States are averaging about 7.5 pounds each or some 16 percent more than in 1909-13.

Data on trends in the quality and grades of wool are not available but an analysis of the 1946 clip indicates that about 52.5 percent of that clip was classed as Fine; 15.8 percent, 1/2 blood; 15.5 percent, 3/8 blood; 9.9 percent, 1/4 blood; .9 percent, Low 1/4 blood; .3 percent, Common and braid; and 5.1 percent, Off wools. Percentages of the 1946 classed as Fine generally were substantially higher in the western range States than in the native sheep States. They were highest in the southwest where they ranged as high as 95 percent in Texas, and they averaged nearly 69 percent in the 13 range sheep States compared with an average of only 19 percent in the native sheep States. 5/

Another important aspect of the shift in the location of sheep has been its effect on the size of the lamb crop, i.e., the number of lambs saved per 100 ewes in the breeding flock. The percentage lamb crop for the United States during the 10-year period 1942-51 was essentially the same as in 1924-30 (86.3 compared with 86.2) because an increase in most States in the number of lambs saved per 100 ewes was offset by an increasing proportion of the breeding flocks in Texas and the other range States where lamb crops are substantially lower than in the native States. During that period numbers of lambs saved per 100 ewes in the native sheep States increased from 99 to 100. It decreased from 72 to 68 in Texas where drought has prevailed in recent years, while in the 12 other range sheep States it increased from 81 to 86.

A significant trend which has an important bearing on potentialities of the domestic sheep and wool industry is the increasing emphasis on, and the increasing proportion of farmers' and ranchers' income from lamb and mutton rather than from wool. In the early days of the domestic sheep industry, sheep were raised primarily for their wool. Prior to 1920 the sale of shorn wool was providing some 40 to 50 percent of farmers' and ranchers' gross income from sheep. (See Appendix table 4.) But the portion of their gross receipts from shorn wool has gradually decreased to a point where, in four out of the last six years, less than 30 percent of their gross income has been from the sale of shorn wool. The relative importance of wool as a source of income varies of course with type of operation and section of the country. It is more important with range lambing than with shed lambing, and it is more important generally in the range States than in the native States. Also a portion of the income from lamb and sheep sales is derived from the value of pulled wool but in recent years this has been the equivalent of only 7 or 8 percent of the farmers' and ranchers'

5/ For an analysis of the 1946 clip see The Domestic Wool Clip, Grades, Shrinkages, and Related Data, U.S. Department of Agriculture, June 1951.

gross income from sheep. But even in the western States where the emphasis on wool production generally is greater than in the native States, from 65 to more than 70 percent of family operated sheep ranchers' total cash receipts from their sheep enterprise is provided by lamb and sheep sales.

Despite the decreasing share of growers' total cash receipts from wool, the price of wool remains a significant factor in determining the profitableness and, hence, the level of sheep and wool production. Net income on sheep ranches is relatively low compared with alternative enterprises. The margin of income over expenses is so close that a difference of a few cents in the price per pound of either lamb or wool may determine whether the operator makes a profit or loss.

CAUSES OF THE DECLINE IN PRODUCTION

A number of inter-related factors combined to induce the unprecedented decline in the production of sheep and wool from 1942 to 1950. 6/ The most significant of these were:

1. A scarcity of competent labor in an industry which is exceptionally dependent upon an adequate supply of specialized labor.

2. Relatively low returns, high costs, and high risks with sheep compared with cattle.

3. Inability to increase the efficiency of production at a rate comparable to other agricultural enterprises.

4. Uncertainties as to the future arising from adverse price-cost relationships, the constant threat of imports and possible tariff reductions, and the possibility of reductions in grazing allotments.

5. Losses from dogs and predatory animals at a time when competent help for protection against these hazards has been both scarce and expensive.

6. Drought in some areas, especially the Southwest.

Most of these unfavorable factors are still operative although in varying degrees compared with 1942 when the decline in production began.

The scarcity and high cost of competent hired labor were the most significant immediate impacts of World War II on the sheep industry. In the western States where even family-operated sheep ranches were dependent on hired labor for a half of their total labor force, and where unskilled herders can cause large investment losses in a matter of hours, skilled herders became almost non-existent. Wage rates for the less skilled labor

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6/ Earlier analyses of the decline in domestic sheep and wool production may be found in Increasing Domestic Wool Production, Senate Document No. 100, 82d Congress 2d Session, February 5, 1952; and in Domestic Wool Requirements and Sources of Supply, U. S. Department of Agriculture, June 1950.

that was available increased. And the supply of family labor declined with the loss to the armed forces and defense industries. Prices of sheep remained relatively favorable for a time (see Appendix table 5) and sheep operators who were in a position to do so began to liquidate their flocks and shift to cattle, a type of production which is much less dependent upon hired labor.

In the native or farm flock States many of the same factors were at work although their impact was slightly different than in the range States. In the native States most flocks had less than 100 head. They were minor farm enterprises which had been established largely to utilize unpaid family labor, feed resources not readily utilized by other livestock, and to augment the relatively low farm incomes of the 1930's. The scarcity and high cost of hired labor, the dwindling supply of family labor, increasing losses caused by dogs and other predators which were more difficult to control with less labor, and the favorable incomes received from the major farm enterprises, induced many farmers to liquidate their sheep enterprise at the relatively favorable lamb and ewe prices which still prevailed in 1942. They simply did not want to be bothered with sheep at a time when incomes were favorable and labor was scarce.

In the succeeding years the relatively low returns from sheep compared with cattle doubtless were the dominant reason for the continuing decline in sheep numbers (fig. 2). Relatively stable wool prices in a period when cattle prices were increasing rapidly, increasing production costs, continued scarcity and high cost of labor, inability to increase the efficiency of production and thus lower production costs, and increasing competition from synthetic and other fibers, all contributed to the sheep operators' relatively low net incomes. Uncertainties as to the prospective impacts on the domestic sheep industry of foreign supplies and domestic stocks of wool and tariff reductions such as those of 1948 contributed to the sheep operators' decisions to shift to cattle or to get out of the ranching business. As the sheep operators in some of the western States left the ranching business they were not always replaced--not only because of the unfavorable income position of sheep production but also because the Federal land management agencies used such opportunities to reduce numbers of animals permitted on the Federal ranges in their efforts to bring rates of stocking more nearly in line with estimated sustained carrying capacities, with a minimum of inconvenience or loss to ranchers. The fact that grazing allotments of other operators also have been reduced in the move to bring rates of stocking in line with carrying capacities has created an uncertainty in the minds of some ranchers as to their security of tenure on Federal grazing lands. 7/

Since 1943 the net ranch income on one-band sheep ranches in the Intermountain region has been less than that of family-operated cattle ranches in every year except 1950 and 1951. (See Appendix table 6.) Percentage returns on investment were higher on cattle ranches in 5 out of the 6 years from 1944 to 1949. The hired labor bill on these sheep ranches increased from about $1,700 in 1942 to nearly $5,500 in 1952, while the labor bill on

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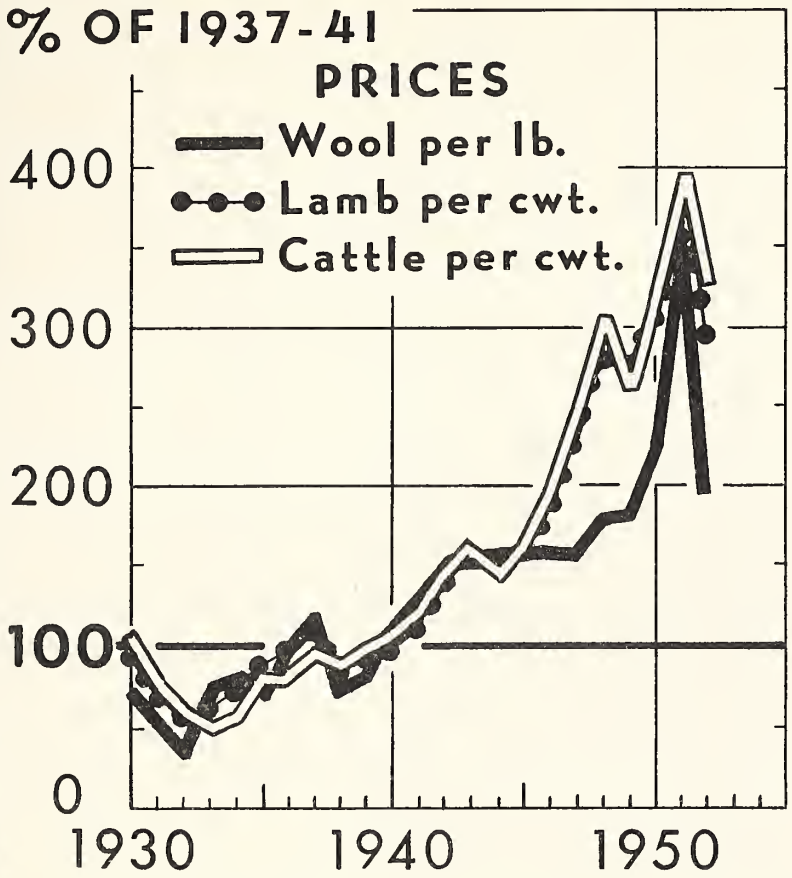
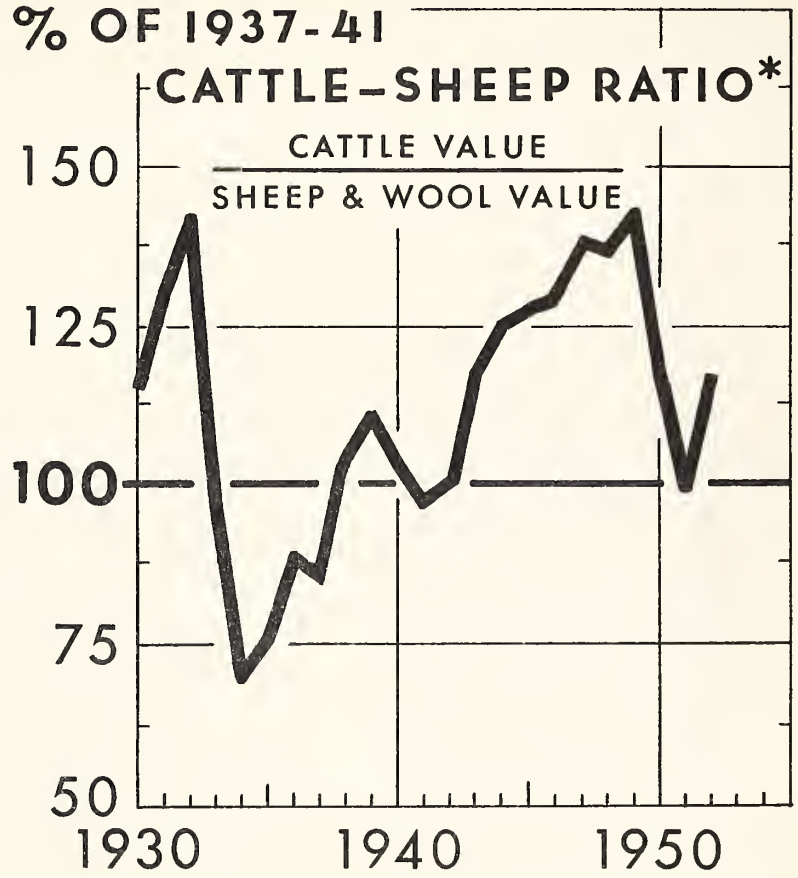
7/ See Domestic Wool Requirements and Sources of Supply, U. S. Department of Agriculture, June 1950, for a summary of reasons given by farmers and ranchers for reducing sheep numbers.

SHEEP AND CATTLE PRICES, AND CATTLE-SHEEP VALUE RATIO





* RATIO OF AVERAGE VALUE PER HEAD OF CATTLE ON FARMS AND RANCHES TO VALUE PER EWE OF STOCK SHEEP ON FARMS AND RANCHES PLUS GROWERS' CASH RECEIPTS FOR WOOL

U. S. DEPARTMENT OF AGRICULTURE NEG. 49353-XX BUREAU OF AGRICULTURAL ECONOMICS

the cattle ranches was increasing from little more than $100 to less than $500. (See Appendix table 7.) A similar though less marked situation has prevailed on family-operated sheep and cattle ranches in the Northern Great Plains where many of the sheep are under fence and ranchers are less dependent on hired labor. There the net returns on family-operated sheep ranches generally have exceeded that on family-operated cattle ranches, but their investments have been substantially larger.

Favorable lamb and wool prices in 1950 and 1951 returned sheep operators to a favorable income position in those years. As a consequence, numbers of sheep were increased slightly in those years except in Texas and Oklahoma where a further reduction was made in sheep numbers because of continued drought. The drastic decline in wool and lamb prices since 1951 has again placed sheep and wool production at a disadvantage. This, together with the effects of abnormal drought in the Southwest, is expected to bring a reduction in sheep numbers again in 1953.

While there are limitations to the extent that sheep ranchers can increase their efficiency of production, some have been able to do so. Many others have not. They are operating at about the same level of efficiency as in the pre-drought period 1930-33, and at a slightly lower level than in 1939-42. (See Appendix table 8.) Technological advances which have increased the efficiency of crop farmers and of livestock farmers who are dependent primarily on harvested feeds, have not been effective in the semi-arid range areas of the West (fig. 3). Cattle ranchers have not been significantly different than sheep ranchers in this respect, but favorable cattle prices have maintained their favorable competitive position.

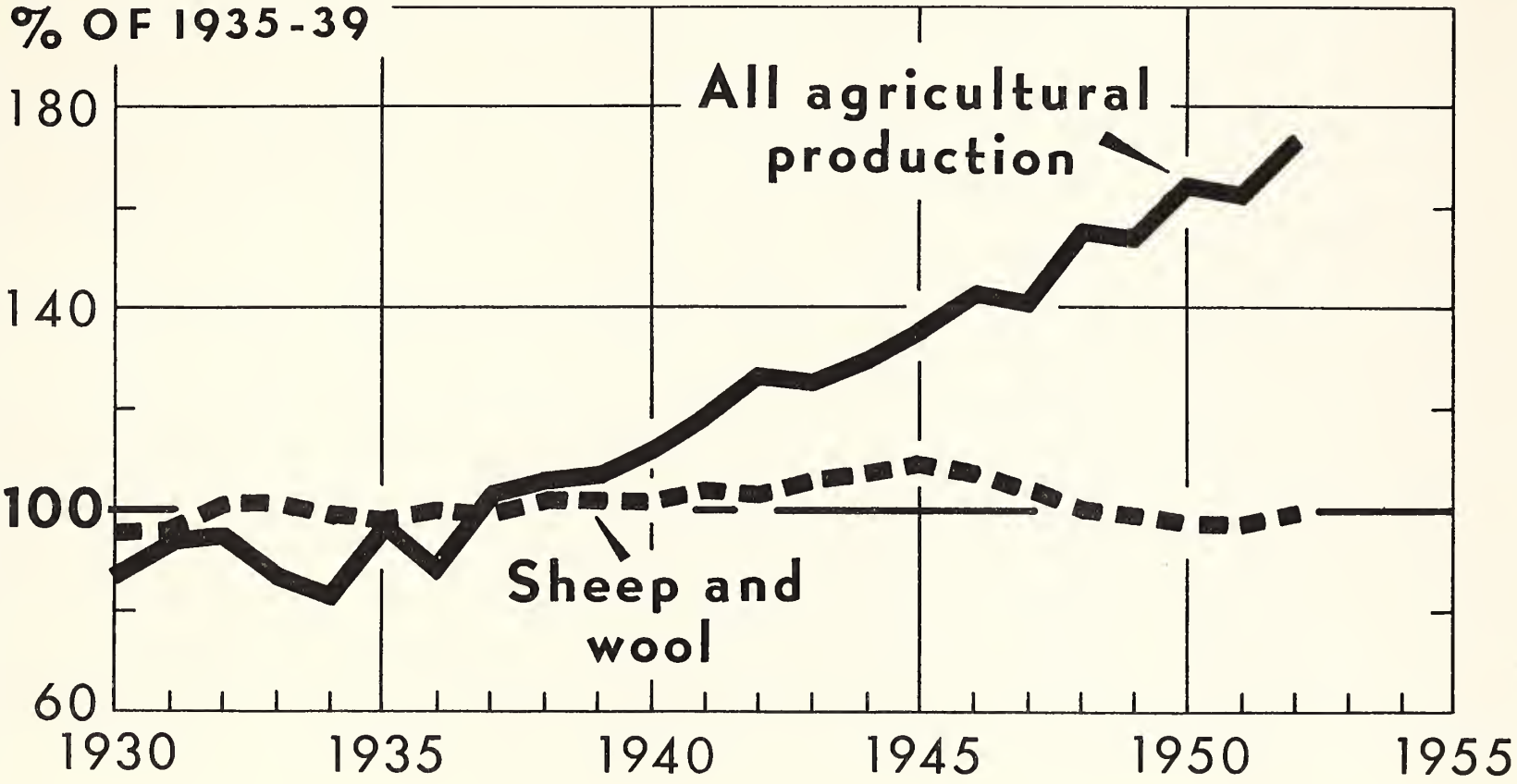
The balance between forage supplies and numbers of forage consuming units of livestock also is a factor which contributed to the decline in numbers of sheep. It may be an even more important factor in any effort to increase the level of sheep and wool production. Numbers of roughage consuming animal units were at record levels in 1943-44 in both the range and the native sheep States. (See Appendix table 9.) A decline in cattle numbers, together with the continuing decline in sheep numbers and poor range conditions in local areas resulted in a gradual reduction in numbers of roughage consuming animal units from 1944 through 1948. Largely due to the continuing increase in cattle numbers, numbers of roughage consuming animal units have been increasing since 1948. They have not yet achieved former levels but, with the exception of the drought area of the Southwest, they are approaching a level which might be considered to be in balance with the sustained carrying capacity of pastures and ranges.

Cattle numbers are reaching the peak of their cycle and, if the usual cyclical pattern is followed, they may be expected to decline over the next several years. Horses and mules will likely continue their trends downward. With these changes in prospect, the country has the range and forage resources for an increase in sheep production.

Another causal factor has been the decline of the frontier and the pressure of civilization on the sheep industry. Ranchers still compete with foreign wool produced under lower cost conditions, while their production costs have been increased by competition from industry and military establishments for land, labor, and other production factors.

Compared with Agriculture as a Whole

OUTPUT PER MAN-HOUR IN SHEEP AND WOOL PRODUCTION



U. S. DEPARTMENT OF AGRICULTURE NEG. 49355-XX BUREAU OF AGRICULTURAL ECONOMICS

Increasing competition from synthetic fibers, which also contributed to the declining competitive position of wool, and the tariff, which from the point of view of the individual producer has been a matter of uncertainty, are discussed later in this report.

TRENDS IN CONSUMPTION OF APPAREL WOOL

About two-thirds of all wool consumed in the United States is apparel wool (fig. 4). Mill use of apparel wool in the United States has declined sharply from the record level of 1946, when consumption was more than double the prewar (1935-39) average. Practically all of the apparel wool used in 1946, as in 1935-39, was for civilian goods.

Consumption during 1949-52 averaged almost one-third lower than during 1946-48 but about one-third above 1935-39. An increase in the quantity of wool used for military items, however, accounted for three-fourths of the increase over 1935-39; total civilian usage during 1949-52 was only one-tenth above prewar, about half the increase in population.

The decline since the end of World War II has been somewhat greater for 60's and finer wool than for the coarser wools (table 3 and Appendix table 10). Likewise, consumption on the worsted system of manufacture has declined somewhat more than on the woolen system (table 4 and Appendix table 11).

Table 3.- Percentage distribution of apparel wool consumption by grades, United States, 1946 to 1952

Grades	1946	1947	1948	1949	1950	1951	1952
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
60's and finer	54.9	62.2	62.6	54.6	56.3	58.5	51.2
50's up to 60's	31.2	25.6	26.9	35.4	34.5	32.8	35.8
48's and coarser	13.9	12.2	10.5	10.0	9.2	8.7	13.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

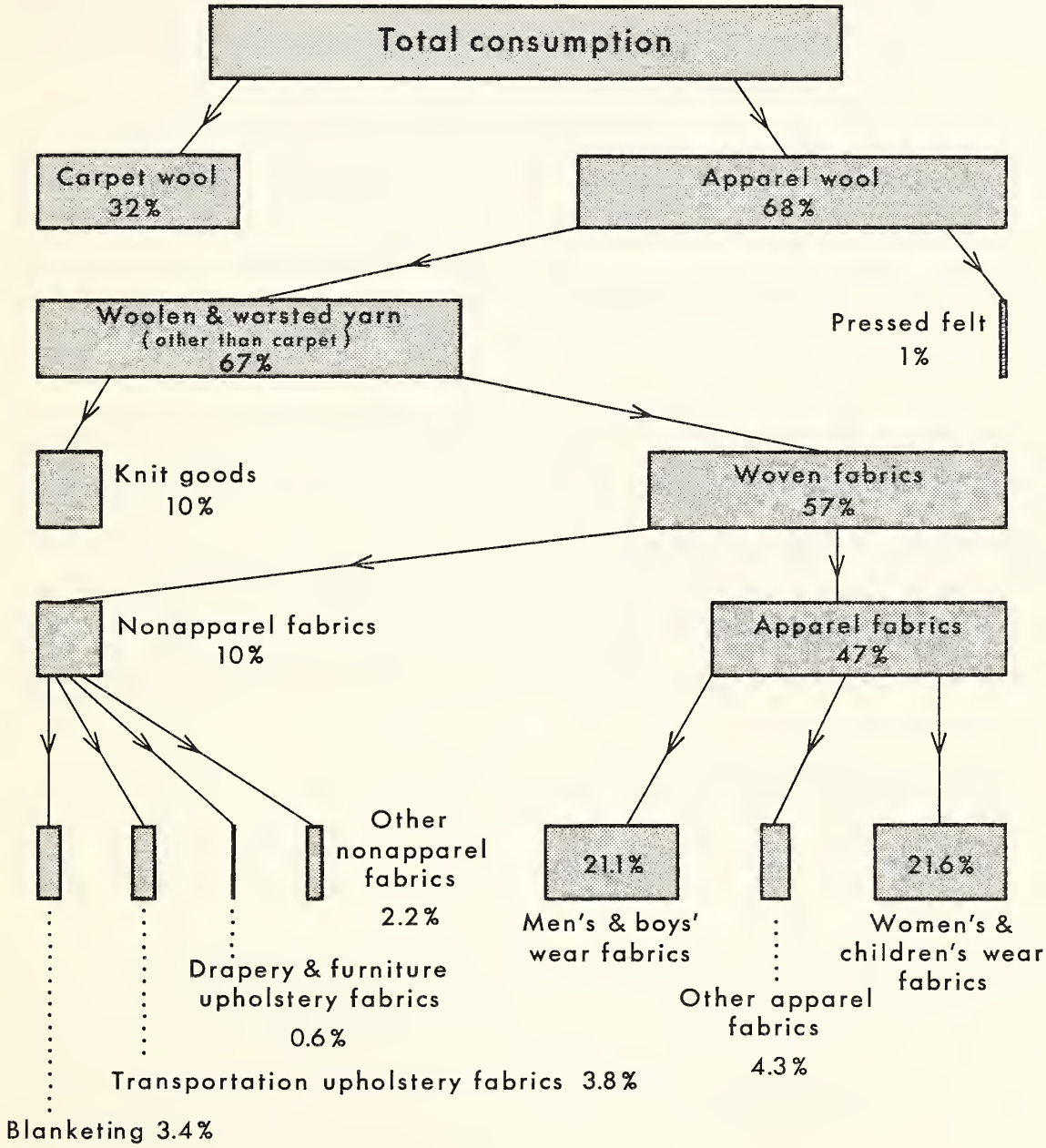
Derived from reports of the Bureau of the Census.

Table 4.- Percentage distribution of apparel wool consumption on woolen and worsted systems, United States, 1946 to 1952

System	1946	1947	1948	1949	1950	1951	1952
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Worsted	56.9	64.0	65.8	59.1	67.3	58.9	53.9
Woolen	43.1	36.0	34.2	40.9	32.7	41.1	46.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Derived from reports of the Bureau of the Census.

DISTRIBUTION OF WOOL CONSUMPTION IN U. S.



SOURCE: BUREAU OF THE CENSUS DATA FOR 1949

U. S. DEPARTMENT OF AGRICULTURE NEG. 47868-X BUREAU OF AGRICULTURAL ECONOMICS

Although these proportions have shown a net downward trend during the postwar period, they have varied considerably from year to year, reflecting short term fluctuations in demand for the various end items and in price differentials between grades and staples.

Whereas domestic production was equivalent to about four-fifths of total consumption during 1935-39, it was equivalent to only about one-third of the quantity consumed during 1949-52. (See Appendix table 12.) The lower ratio in recent years reflects the sharply lower production, increased imports, and the higher rate of consumption relative to 1935-39.

Although the total quantity of domestic wool consumed during the last ten years was about equal to the quantity produced, domestic wool did not move into manufacturing channels each year as produced. During 1944-46, a large part of domestic production accumulated as Commodity Credit Corporation holdings in the course of price-support operations. The accumulation was absorbed in manufacturing channels during 1947-50, when prices of foreign wools advanced to levels above support prices and above CCC selling prices for wools acquired during 1944-46. Again in 1952, a substantial part of the domestic clip was sold to CCC.

The trend of total apparel wool consumption in the United States as reported by the Bureau of the Census does not fully reveal the sharp downtrend in the use of apparel wool for civilian goods in recent years, since the total includes mill use of wool for military as well as civilian goods.

Although data on military use are not reported, such information as is available indicates that very little wool was used for military items during 1946-50--the quantity used was probably less than 5 percent of the total. However, such usage increased sharply in 1951, probably accounting for about two-fifths of the total that year, and then declined to probably not more than one-fifth of the 1952 total.

Per capita civilian usage during 1942-45 averaged about 1.8 pounds, scoured basis, due in part to the restrictions on civilian consumption during 1942 and 1943, when per capita consumption averaged 1.3 pounds. The 1942-45 average was about 15 percent below prewar. However, per capita consumption increased sharply in 1946 to a new record level.

The use of apparel wool by mills for the manufacture of civilian goods, although fluctuating sharply from year to year, has trended sharply downward from the record level of 1946, both total and per capita. Average annual per capita consumption during 1949-52 was almost one-half below the 1946-48 average and almost one-tenth below 1935-39, despite a much higher level of real income. Among the factors which have more than offset the effect of an upward trend in real income and other factors which would normally be expected to result in an upward trend in consumption were:

(1) An unusually high level of per capita mill consumption for civilian goods following the cessation of hostilities in 1945. The increase over 1935-39 was out of proportion to the increase in real disposable income. While per capita real income during 1946 was only 57 percent over prewar and during 1946-48 averaged 50 percent over prewar, per capita civilian consumption

of apparel wool during 1946 was double the prewar average and during 1946-48 averaged 70 percent over prewar. The high level of consumption during those years reflected, in addition to the high level of income, a building up of inventories of civilian goods which had been reduced during the war years, the requirements of veterans returning to civilian life, and substantial exports of wool manufactures.

Although the United States is normally a net importer of wool manufactures, exports of manufactures during World War II and 1946-47 were substantially in excess of imports. These unusually large exports consisted of military fabrics shipped to Allied countries under lend-lease, UNRRA shipments, and unusually large commercial shipments, reflecting a deferred backlog of demand resulting from wartime shortages. During 1948, however, the United States returned to its normal position of net importer. The rising trend in net imports of manufactures since 1948 is reflected in the downward trend of mill use of raw wool.

(2) A trend toward lighter weight clothing. Improvements in heating and transportation facilities have, over the years, resulted in a trend toward lighter clothing in the United States, a trend which has continued in the post-World War II period at an accelerated rate.

(3) Increased competition from budgetary items other than clothing for the consumer's dollar. Although both per capita real disposable income and expenditures during 1949-52 were about double pre-World War II, per capita real expenditure for clothing was up less than one-third. The proportion of total expenditure spent for clothing which averaged 8.4 percent during 1935-39 and 8.5 percent in 1946-48, declined sharply to only 7.4 percent during 1949-52 (table 5).

(4) Increased competition from other fibers, particularly man-made fibers. (See Appendix tables 13 to 15.) While per capita consumption of apparel wool declined from an average of 3.7 pounds, scoured basis, during 1946-48 to only 2.4 pounds during 1949-52, per capita use of man-made staple fiber increased from 1.8 to 2.4 pounds between the two periods (table 6). The increase in the total use of man-made staple fiber reflects in part the sharp increase in the use of such fiber in items, particularly apparel, for which wool traditionally has been considered the most desirable fiber. (See Appendix tables 16 to 19.) The greatly improved quality and relatively lower prices of these fibers are among the major factors which have encouraged their use in these areas. While wool prices during 1949-52 averaged about 50 percent higher than during 1946-48 and more than double pre-World War II, prices of viscose staple were up only one-fifth relative to 1946-48 and only one-third relative to pre-World War II (table 7 and Appendix table 20). Prices of acetate staple fiber since World War II have averaged about 15 percent below 1935-39.

Of the man-made fiber, rayon and acetate have been the major competitors. However, several new fibers have been introduced in recent years, and others are being developed. The manufacturers of both these and the older man-made fibers are continually striving to improve their product. Their present plans call for increases in production capacity for rayon staple of almost two-thirds, of acetate staple of about one-eighth, and of non-cellulosic staple of almost 3.5 times estimated 1952 capacities by October 1954 (table 8). Output of cellulosic staple in 1952 is estimated to have been between 80 and 85 percent of capacity.

Table 5.- Expenditure for clothing related to disposable income and consumer personal expenditure, United States, average 1935-39, annual 1946 to 1952

Year	Disposable income per person	Consumer personal expenditure per person	Expenditure for clothing as percent of	
			Disposable income	Consumer personal expenditure
	1935-39 Dollars	1935-39 Dollars	Percent	Percent
1935-39 average	506	486	8.09	8.42
1946	794	734	8.37	9.07
1947	727	710	8.04	8.25
1948	737	696	7.78	8.24
1946-48 average	752	713	8.06	8.52
1949	727	701	7.56	7.84
1950	777	735	6.95	7.35
1951	775	716	6.68	7.23
1952 1/	778	718	6.78	7.34
1949-52 average 1/	764	718	6.99	7.44

1/ Preliminary.

Derived from data of U. S. Department of Commerce.

Table 6.- Per capita consumption of wool and man-made staple fiber, United States, average 1935-39, annual 1946 to 1952

Year	Wool 1/			Man-made staple fiber		
	Apparel	Carpet	Total	Cellulosic 2/	Non-cellulosic 3/	Total
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
1935-39 average	2.15	0.73	2.88	0.34		0.34
1946	4.25	.89	5.14	1.46		1.46
1947	3.60	1.18	4.78	1.77		1.77
1948	3.26	1.40	4.66	2.04		2.04
1949	2.24	1.07	3.31	1.39	0.07	1.46
1950	2.84	1.29	4.13	2.57	.15	2.72
1951	2.44	.65	3.09	2.62	.21	2.83
1952	2.18	.75	2.93	2.32	.30	2.62

1/ Scoured basis.

2/ Domestic shipments plus imports for consumption.

3/ Domestic production.

Derived from data of Bureau of the Census and Textile Economics Bureau.

Table 7.- Indexes of prices of wool and man-made cellulosic staple fiber, United States, average 1935-39, annual 1946 to 1952

Year	Wool		Cellulosic staple	
	Fine 1/	Medium 2/	Viscose 3/	Acetate 4/
1935-39 average	100	100	100	100
1946	110	124	90	74
1947	139	136	113	91
1948	200	163	129	91
1949	211	156	127	82
1950	242	197	128	81
1951	307	305	141	91
1952	189	167	140	81

1/ Australian 64's, 70's good topmaking, clean basis, duty-paid, Boston.
2/ Montevideo super 1's (56's), clean basis, duty-paid, Boston.
3/ $1\frac{1}{2}$ denier.
4/ 5 denier.

Derived from prices reported by Bureau of Labor Statistics, Textile Economics Bureau, and United States Department of Agriculture.

Table 8.- Production and capacity of man-made staple fiber in the United States, 1940 to 1952

Period	Cellulosic			Non-cellulosic	Total
	Rayon	Acetate	Total		
	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.
	Actual Production				
1940	71	10	81		81
1941	105	17	122		122
1942	128	26	154		154
1943	130	32	162		162
1944	129	40	169		169
1945	129	39	168		168
1946	133	44	177		177
1947	168	60	228		228
1948	184	84	268		268
1949	130	65	195	10	205
1950	188	117	305	23	328
1951	207	129	336	33	369
1952	212	95	307	47	354
	Forecast of annual capacity - as of:				
March 1954	360	171	531	147	678
October 1954	360	171	531	208	739

From Textile Organon.

The extent to which such fibers will be used in the future in the manufacture of items for which wool traditionally has been considered the most desirable fiber is, of course, conjectural and will depend mainly upon relative prices and quality characteristics and consumer preference.

MARKETING, MANUFACTURING, AND DISTRIBUTION OF WOOL AND WOOL PRODUCTS

In terms of costs of services rendered, the marketing, manufacturing, and distribution phases of the domestic wool industry are about six times as large as the farm production phase (fig. 5). They average about 86 cents of the consumer's dollar spent for apparel and household goods made of wool compared with about 14 cents received for farm production of the domestic wool used. Nearly half of the marketing, manufacturing, and distribution costs are labor costs (fig. 6). Although progress has been made in recent years by operators in these segments of the industry, further improvements in the quality and efficiency of the services performed would contribute in an important way toward promoting a sound and prosperous domestic wool industry.

Marketing Raw Wool

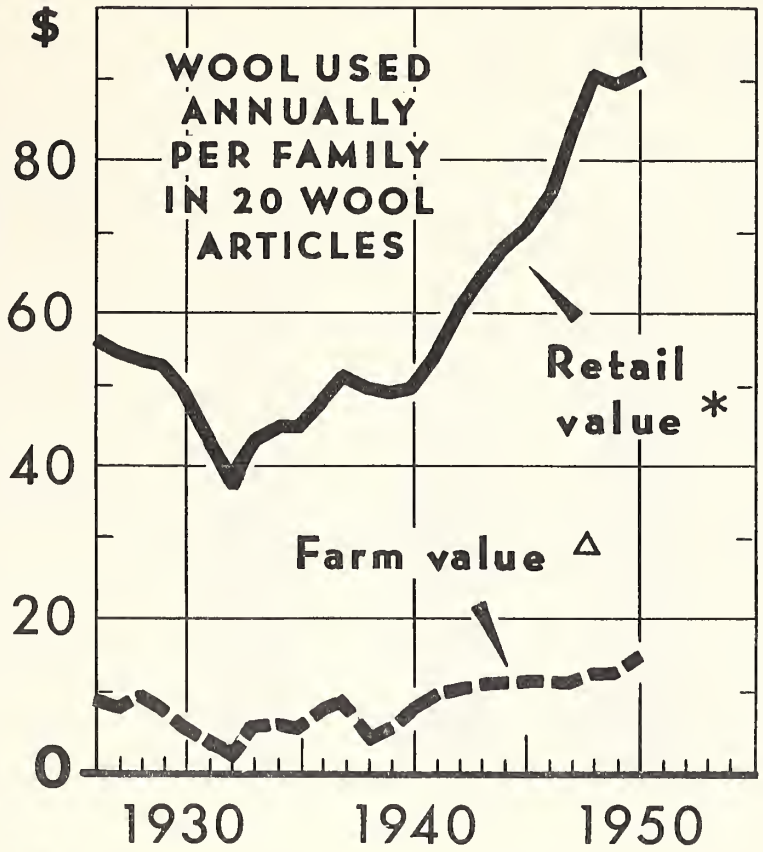
Taking wool from farms and ranches and delivering it to manufacturers involves such marketing services as assembling, transporting, grading, storing, and merchandising. Marketers involved in these operations include brokers who arrange for the purchase or sale of wool but take no part in preparing, handling, or financing it; commission agents, including cooperatives, who receive the wool on consignment, take responsibility for its care and preparation while it is held for sale, sell the wool and collect from buyers, deduct expenses and commissions, and remit settlement to the owner; and dealers who take outright possession of the wool, ship it to centers of consumption, prepare it for processors, and sell it for their own accounts. The combined gross margins for these services average about 2.4 cents of the consumer's dollar spent for apparel and household goods made of wool.

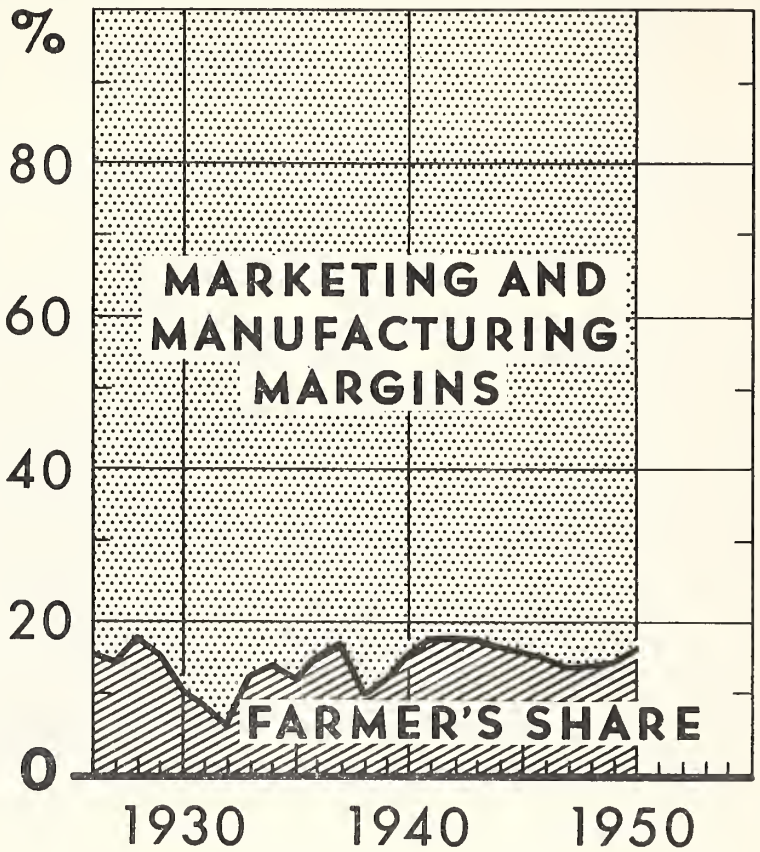
The nature and extent of preparing wool at the time of shearing vary considerably from one ranch to another. In typical ranch operations, only such objectionable parts of the fleece as tags and badly stained wool are removed and packed separately. The fleece is then rolled, flesh side out, into a bundle and tied with heavy paper twine. These tied fleeces are then packed into large bags. Careful operators separate yearling, black, and buck fleeces and bag them separately from ewe wool. Other variations include a limited amount of grading at the ranch.

Practices vary considerably from one area to another, with differences in size of individual clips, and in other factors. In the Western, or territory States, where flocks are large, much of the wool is sold at the ranch to agents of central market dealers, particularly those in Boston. When possible, buyers inspect the clips at the shearing shed or warehouse during the shearing season as a basis for estimating shrinkage and quality, but when such inspection is not possible, the wool is examined in the barn, or is bought on the basis of knowledge of previous clips of the same producer. The wool usually is shipped to central markets for storage, preparation, processing, and manufacture.

In Texas, a large part of the wool is shipped to warehouses for sale. These warehouses provide facilities for concentrating wool in volumes large enough for efficient handling, prepare the wool for storage and sale, display sample bags for the inspection of buyers, and grade some of the wool as a basis for sale by private treaty or sealed bids. Many warehouse operators buy small clips and a few operators buy large quantities of wool each year.

MARGINS FOR WOOL PRODUCTS





* IN COMBINING THE VALUES FOR THE 20 ITEMS, PRICES WERE WEIGHTED BY THE NUMBER OF ARTICLES PURCHASED BY THE AVERAGE WAGE EARNER'S FAMILY AS REPORTED BY THE BUREAU OF LABOR STATISTICS. COMPLETE DATA FOR ALL ITEMS WERE NOT AVAILABLE EACH YEAR AND TOTALS WERE ESTIMATED FOR SOME YEARS ON THE BASIS OF RATIOS OF AVAILABLE ITEMS TO TOTALS.

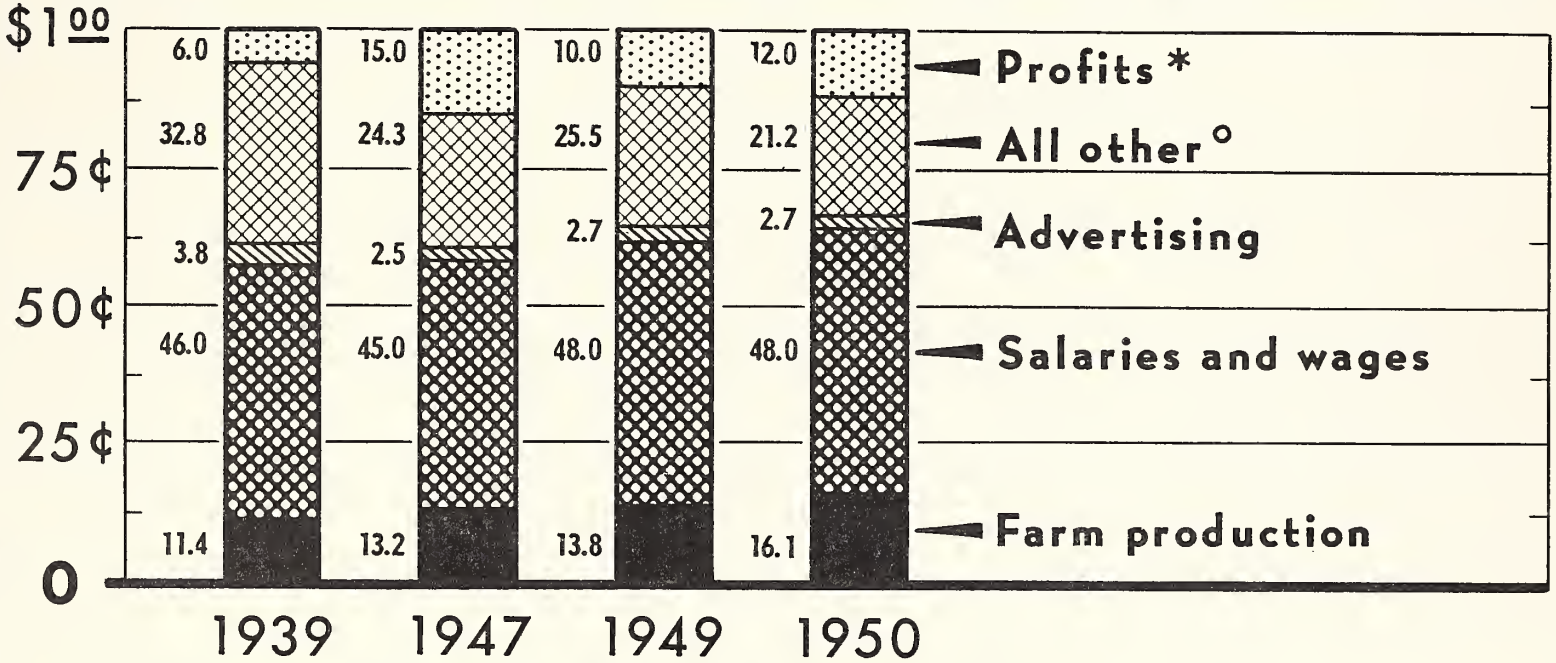
△ FARM VALUE OF 4.86 POUNDS OF TERRITORY WOOL AND 5.85 POUNDS OF WOOL FROM EASTERN STATES.

U. S. DEPARTMENT OF AGRICULTURE NEG. 48664-XX BUREAU OF AGRICULTURAL ECONOMICS

Where It Goes

THE CONSUMER'S WOOL DOLLAR, BY COST ITEMS

Paid for Apparel and Household Goods, Selected Years



BASED ON OFFICIAL AND OTHER DATA, AND PARTLY ESTIMATED.

* NET PROFITS OF ALL AGENCIES, EXCEPT FARM PRODUCERS, AFTER DEDUCTION OF FEDERAL INCOME AND EXCESS-PROFIT TAXES.

° INCLUDES DEDUCTIONS FOR FEDERAL INCOME AND EXCESS-PROFIT TAXES.

U. S. DEPARTMENT OF AGRICULTURE NEG. 48659-XX BUREAU OF AGRICULTURAL ECONOMICS

In the native, or fleece-wool States, where flocks are small, most of the wool is sold to country dealers who assemble the lots and either sell them to the larger merchants or store them in their own warehouses. Many merchants in the larger cities buy wool from country buyers and resell it to merchants in central markets. In many instances, the wool is ungraded, but in others it is roughly graded into three classes: Fine, medium, and rejects. Dealers in central markets send their agents to small towns or to farmer-owned warehouses to buy wool suitable to their needs. This wool is shipped to the larger concentration points, where it is graded and otherwise prepared on the basis of mill requirements and sold to manufacturers.

Substantial quantities of wool are marketed through cooperative market associations. The methods used in physical handling, showing, and selling wool through these associations are similar in most respects to those of other agencies.

Many of the firms which provide preparation and other marketing services for wool operate in or through the central market, particularly Boston. These dealers vary greatly in size of organization and in kind and quantity of wool handled. Although 85 percent of domestic shorn wool is produced west of the Mississippi River, a major part of the preparation and other marketing services are performed by firms located in the vicinity of Boston.

Processing and Manufacturing

When domestic wool reaches the mill it is sorted, scoured, and carbonized, if necessary; that used in woolens is blended, carded, and spun into yarns; that used in worsteds is carded, combed, made into tops, and spun into yarn; the yarns are knitted or woven into fabrics; and the fabrics are put through finishing processes before they are ready for fabricators of apparel and household goods and for industrial uses. The relative importance of these operations, from the viewpoint of cost, is indicated by the gross margins per pound of wool which, for these operations, average almost as much as total returns to growers for farm production of the wool and about 5 times as much as total costs of marketing the raw wool (fig. 7).

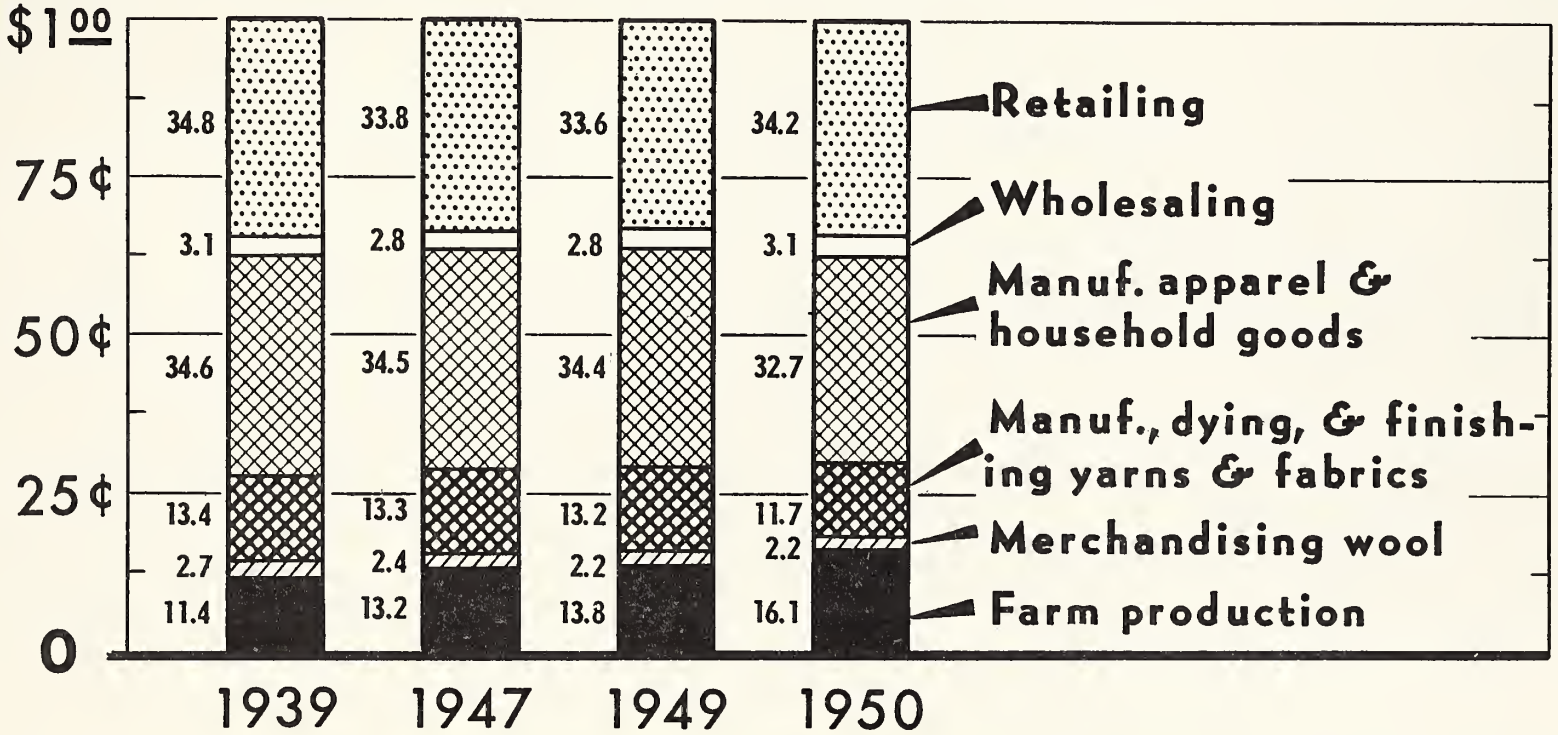
Wool manufacturers' gross margins in 1947 averaged about 47 percent of the value of the products for all manufacturers combined and ranged from about 38 percent for scouring and combing plants to about 49 percent for manufacturers of woolen and worsted fabrics. In 1949 and 1950, these proportions were less than in 1947. The proportions of gross margins of manufacturers that were accounted for by wages and salaries decreased from 57 percent in 1939 to less than 50 percent in the early 1950's.

The competitive position of poorly prepared wool has been weakened in recent years as a result of technological and other developments in the wool manufacturing industry. These developments were associated with large increases in wage rates and the development of more automatic machinery for use in reducing labor costs. Manufacturers tend to increase their discrimination against wool that requires much labor in preparation and to increase their preference for wool and other fibers that are uniform enough to meet the requirements of the more automatic machinery and improved methods.

Where It Goes

THE CONSUMER'S WOOL DOLLAR, BY OPERATIONS OR SERVICES

Paid for Apparel and Household Goods, Selected Years



BASED ON OFFICIAL AND OTHER DATA, AND PARTLY ESTIMATED.

U. S. DEPARTMENT OF AGRICULTURE NEG. 48657-XX BUREAU OF AGRICULTURAL ECONOMICS

Although machinery and equipment used by manufacturers of woolens and worsteds have been improved in recent years, further improvements are needed. Numbers of French combs, worsted spinning spindles of the American system, and automatic looms have increased, whereas numbers of other kinds of machinery have decreased in recent years. During World War II, much of the machinery in use was overworked and replacements of badly worn and obsolete machinery and equipment with new and improved types were delayed by shortages. But in more recent years, substantial improvements have been made. Census reports show that expenditures for new plants and equipment by manufacturers of woolens and worsteds increased from $9,307,000 in 1939 to $50,009,000 in 1947 and totaled $32,836,000 in 1952. Of the total expenditure in 1952, about $27,750,000 was for new machinery and equipment.

Growth of the rayon industry, together with developments in cotton manufacturing machinery, stimulated a minor revolution in the manufacturing industry for textile machinery after World War II. An outgrowth of the developments was the introduction of the "American system" of worsted manufacture, which combines a short-cut method of preparing the top for spinning and an improved spinning frame. As a result, the number of stages in the drafting and roving operations are greatly reduced, the machines can be run at higher speed, and yarns can be produced at lower cost, particularly for labor. Improvements have also been made in other machinery used in spinning and weaving on both the woolen and worsted systems.

The principal advantages of the new machines are reduced labor requirements, wider range of staples that can be used, and the ability to shift readily from one type of fiber to another. But to operate efficiently, these high-speed machines require a highly uniform fiber stock. If the stock is not uniform, breaks occur in the roving or yarn at high speeds and the machines stop. Costs of the labor attending the machines then become high. Under these circumstances, manufacturers can afford to pay premiums for highly uniform fibers and they tend to discount poorly prepared wool more heavily.

The importance of reducing labor costs by use of improved machinery or by other means may be indicated by data showing that wages accounted for about 43 percent of gross operating margins for manufacturers of woolens and worsteds in 1947 and that average hourly wage rates of workers in the woolen and worsted manufacturing industry increased from 53 cents in 1939 to $1.55 in 1952. Most of the wool-manufacturing industry is in New England and the Middle Atlantic States where labor costs are relatively high, although in recent years the manufacture of wool in the South, where labor costs are relatively low, has increased considerably. The proportion of total number of woolen and worsted spindles in place that were located in the South increased from 5 percent in 1939 to 8 percent in 1949. The corresponding proportion for woolen and worsted looms in place increased from 6 percent in 1939 to more than 12 percent in 1949.

Fabrication of Apparel and Household Goods

The great importance of the fabrication of apparel and household textiles, from the viewpoint of cost, is indicated by the gross margins for fabricating these products which average about 2.5 times as much as gross returns to growers for farm production of the wool used, more than 14 times as much as gross

margins for marketing raw wool, more than 2.6 times as much as gross margins for manufacturing and finishing the yarns and fabrics used, and almost as much as gross margins for wholesale and retail distribution of the products. An analysis by the Wool Bureau of the division of the consumer's dollar paid for a man's two-piece worsted suit, at the moderate price of $50 during the 1949-50 season, shows that about 10.9 percent was acccunted for by the costs of the cleaned wool required, 16.9 percent by costs of manufacturing the fabric, 32.2 percent by costs of making the garment, and 40 percent by retail distribution.

Fabricators of textile products range from large companies operating several establishments to small family shops. A large proportion of the establishments are located in the Middle Atlantic States and most of them are operated as single units under corporate or partnership ownership and control. Methods employed in fabricating textile products vary with the nature of the products. The processes involved usually include cutting the garment parts from purchased yard goods, sewing or joining the parts into the completed garment, folding and pressing, and boxing the products for shipment. Fully integrated plants usually are organized into four departments on the basis of these processes or functions.

Spreading, cutting, and sewing machines and supplementary facilities make up the basic equipment used in the manufacture of apparel. In recent years, spreading machines have been more widely employed and the trend toward the increased use of electrical knife cutting and the replacement of some types of hand cutting by the use of dye or clicker cutting for small pieces have been continued. Overhead rails have been more generally employed over the cutting tables to increase the flexibility of the cutting machines and to permit the use of more cutting machines at the same time.

No revolutionary changes in machinery and equipment in the sewing department have occurred within recent years. But a number of mechanical improvements have been widely adopted throughout the industry. Use of self-oiling, high-speed sewing machines capable of running up to 5,000 revolutions per minute has increased and the use of double-needle machines has been extended. Automatic or manually controlled thread-cutting and clipping machines have been used in many cases as replacements for the cruder methods of cutting thread. Special guides and attachments have been widely introduced throughout the industry to simplify and speed up the sewing operations. Turning and folding machines have been improved, use of automatic ruffling machines has been increased, and the practice of using buttonhole sewing machines in tandem has become more general in recent years. Other improvements which have been expanded include the use of glass table tops with florescent lighting underneath to facilitate inspection, the more frequent use of chutes and bins to improve work and reduce handling, improvements in interior lighting to eliminate shadows, and provision of more electrical outlets to make more flexible the arrangement of machines. Total expenditures for plants and equipment by these manufacturers increased from about $14,000,000 in 1939 to more than $80,000,000 in 1947 and amounted to $69,309,000 in 1951. Expenditures for new machinery and equipment totaled $39,792,000 in 1949 and $50,792,000 in 1951.

Wages and salaries, particularly by manufacturers of apparel and other finished textile products, average more than half of the gross operating margin and more than a fourth of the gross sales of these manufacturers. Average hourly earnings of wage workers in the apparel and other finished-

textile products industry have more than doubled since 1939. These facts emphasize the importance of making full use of technological developments and of improvements in organization and operation in increasing the efficiency and in reducing the costs, particularly of labor, of fabricating apparel and household textiles.

Wholesale and Retail Distribution

Distribution of wool products includes the wholesaling of intermediate products, such as yarns and fabrics, mainly to manufacturers, as well as the wholesaling and retailing of finished products to ultimate consumers. The relative importance of the distribution services, from the viewpoint of cost, is indicated by gross margins for wholesale and retail distribution of wool products which average about 2.7 times gross returns to growers for farm production of the wool used, almost 3 times the gross margins for manufacturing and finishing the yarns and fabrics, and about 9 percent more than gross margins of fabricators of the apparel and household textiles made of wool.

Large proportions of intermediate textile products are distributed directly from manufacturers to converters, fabricators, and industrial users, although substantial proportions are handled by wholesalers and jobbers. Most of the finished textile products flow directly from manufacturers, or indirectly through a number of different combinations of agencies, to consumers. An important channel of distribution, particularly in earlier years, was from manufacturers to wholesalers to retailers to consumers. But in more recent years, the services of manufacturing and distributing textile products have been integrated to a considerable extent. Price and production regulations during World War II apparently favored the extension of unified control, and integrations in the textile industry apparently reached new high rates during the late 1940's.

Wholesalers include a number of different types and sizes of operators. They supply a ready market outlet to manufacturers for products in rather large volume and relieve manufacturers of making the many contacts necessary to sell directly to retailers. The large-lot purchases made by wholesalers and the assembly services they perform make possible reductions in transportation costs by permitting large-lot shipments over long distances. Wholesalers reduce storage costs and credit risks of manufacturers by advanced buying. They help finance manufacturers by advancing funds and they relieve them of some financial risks which arise in dealing with retailers, whose rate of failure is relatively high.

Wholesalers also perform important services for retailers. The assembly services rendered enable retailers to obtain their supplies from relatively few sources. The readily available supplies made available by wholesalers to retailers enable them to reduce their overhead costs by the use of small stocks and more rapid turnover. Total costs of storage are reduced because large-scale storage in wholesalers' warehouses is cheaper than storage on the relatively high-rent shelves of retailers. In addition, wholesalers provide credit and other services to retailers.

Gross margins for wholesale dry-goods houses increased from an average of about 16 percent of net sales in 1939 to 18.7 percent in 1943, decreased to 15.4 percent in 1949 and averaged 16.3 percent in 1952. Census reports

for 1948 indicate that operating expenses of wholesalers of finished textile goods averaged 11.6 percent of net sales for merchant wholesalers, 5.8 percent for manufacturers' sales branches, 5.6 percent for manufacturers' sales offices, and 3.1 percent for agents and brokers. Expenses per dollar of sale usually average less for wholesalers with large than for those with small volumes of sales. Profits of wholesale dry-goods houses increased from less than 2 percent of net sales in 1939 to 7 percent in 1943 and averaged about 2.3 percent in 1952, before deductions for Federal income taxes.

Retailers include a number of different types and sizes of operators. They represent the final stage in the movement of textile products from farm producers to ultimate consumers. They assemble the products primarily for the benefit of consumers by bringing together, at places convenient to them, various stocks of goods which satisfy the needs and tastes of the customer. Retailers also collect and pass back to wholesalers and to manufacturers information as to the demands of consumers for use as a guide to further production. Retailers perform some of the services of storage, as well as some of the risks involved in holding goods until they are needed by consumers, and extend credit to consumers. In addition, they render delivery and other services to consumers

Retailers' gross margins, as indicated by data for department stores, increased from about 33 percent of net sales in 1932 to about 38 percent during World War II, and decreased to less than 36 percent in the early 1950's. Payroll expenses, the largest item of cost, increased from less than 16 percent of net sales in 1945 to more than 18 percent in the early 1950's. Operating profits increased from less than 2 percent of net sales in 1939 to almost 10 percent in 1945 and then were reduced to about 2 percent in the early 1950's.

WOOL PRICE RELATIONSHIPS, PROGRAMS, AND TARIFFS

Domestic Wool Prices

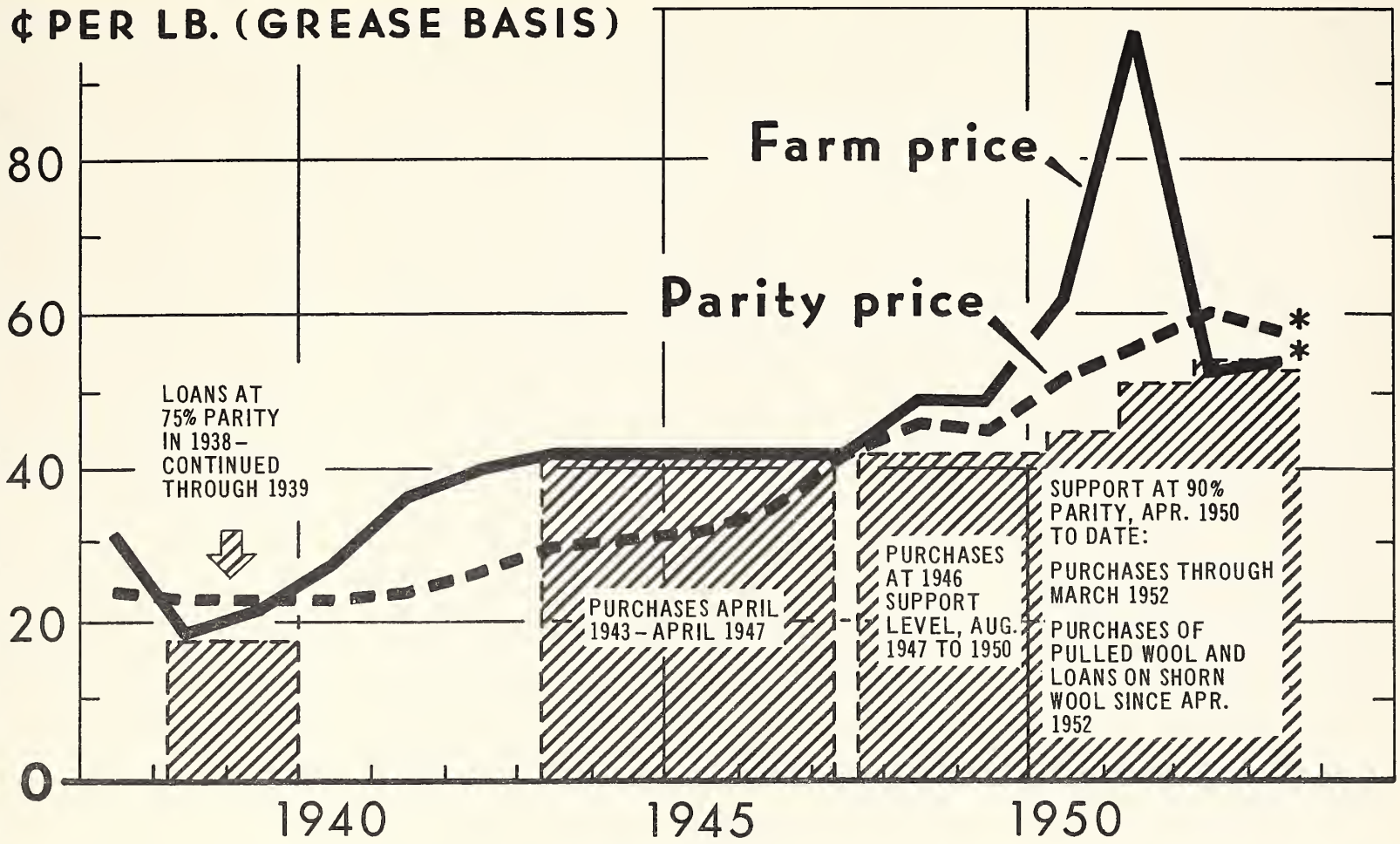
Although domestic wool production usually changes relatively little from year to year, prices fluctuate widely because of changes in demand for wool.

Prices of the various classes and grades of apparel wool tend to rise and fall together although the price changes may be of different magnitudes owing to shifts in the supply and demand of the various grades and staples. Changes in fashion and in disposable income strongly influence both the demand for different classes and grades and the spread in prices between them.

A Government loan program was initiated early in 1938 to support prices to producers. The Commodity Credit Corporation made loans to growers at 75 percent of parity (fig. 8). Prices increased during 1938 and practically all of the loans were redeemed by growers. Loans were again made available to producers in 1939, but, as wool prices were higher than a year earlier, few producers took advantage of the program. In August 1939, the average price received by farmers for wool was 22 cents per pound, or 99 percent of parity.

Prices rose sharply after the start of World War II, in September 1939. Prices to growers increased from an average of 28 cents per pound in 1940 to 40 cents per pound in 1942--a period when domestic production was at the

WOOL PRICES and SUPPORT LEVELS



* *AS OF JULY 15, 1953*

U. S. DEPARTMENT OF AGRICULTURE NEG. 49354-XX BUREAU OF AGRICULTURAL ECONOMICS

highest level of record. The rise in price of domestic wools was mainly the result of the "Buy American" and other military procurement policies, and the increased demand for wool for both military and civilian goods. The U. S. Government restricted the use of wool in the manufacture of non-military items.

The sharp increase in prices in the early 1940's was accompanied by a rise in sheep producers' costs. Following 1942, a world surplus of wool, including war reserves of foreign wools, posed a threat over the domestic market. Growers appealed to the Government for some form of price support. In April 1943 the Commodity Credit Corporation began buying the domestic clip at OPA ceiling levels for the different grades and lengths. The Government purchase prices averaged around 42 cents per pound, farm basis, which at the time the purchase program was inaugurated was 141 percent of parity. This support program continued until April 15, 1947. Support prices remained around 42 cents throughout that period, while parity prices advanced. By 1947, parity prices exceeded the support level.

Support was resumed in August 1947 under mandatory provisions of Public Law 360 of the 80th Congress which required C.C.C. to support the price of domestic wool at the same support level as in 1946 until December 31, 1948. This mandatory requirement was extended through June 30, 1950, by the Agricultural Act of 1948.

Since April 1, 1950, C.C.C. has supported the price of wool at 90 percent of parity in accordance with provisions of the Agricultural Act of 1949. For the year beginning April 1950 the national average support level was 45 cents. The following year it was 51 cents. On April 1, 1952, it was raised to 54 cents, but on April 1, 1953 it was lowered slightly to 53 cents.

The outbreak of the Korean conflict in May 1950 started an unparalleled rise in wool prices. The average price to the Nation's growers rose from 55 cents a pound in May 1950 to a record high of $1.12 a pound in March 1951. From that peak, prices dropped even more sharply than they had advanced. By March 1952 prices averaged about 54 cents--close to the 1951 support level. They were from one to four cents below the support level throughout the marketing season of April 1952 to March 1953. No wool was purchased under the 1950 and 1951 programs but support operations were resumed during the 1952 and 1953 seasons under a program of support loans to producers of shorn wool and direct purchases of pulled wool.

In only four of the ten years since 1943, when wool price support programs have been in force on a continued basis, have wool prices averaged significantly above the average support levels.

During the 1943-46 period the Government acquired practically all of the wool produced in this country and large quantities were accumulated in stocks. Much of our domestic wool requirements were being filled from imported supplies.

By 1946 C.C.C. stocks of wool reached a peak of some 500 million pounds--about 1½ times production in that year. Stocks of wool declined substantially in 1947-49 as selling prices were lowered and open market prices advanced. During 1948 and 1949, market prices averaged around 49 cents a pound compared with support levels of around 42 cents. By the end of 1949 C.C.C.'s wool inventory had been practically eliminated.

From April 1943 through March 1950, C.C.C. purchased 1,634 million pounds of wool under its price support programs. Losses in disposing of this wool totaled $92,200,000.

The Tariff

The sheep industry in the United States has become established with tariff protection which has continued for a long period. The first tariff act for wool became effective July 1, 1816 and the tariff has been in force almost continuously since that time. The only periods since 1816 when wool was imported free of duty were from August 1894 to July 1897, and from December 1913 to May 1921. Over the years many changes have been made in the tariff, both in the type of duties and in the rates themselves. Sometimes ad valorem duties have applied. At other times specific rates have been effective, and combinations of the two have applied. The tariff has also protected domestic manufacturers.

Duties imposed by the Tariff Act of 1922 amounted to 31 cents per clean pound for grease wool except for the coarse grades. The Smoot-Hawley Tariff Act of 1930 established rates for raw wool at, in general, the highest levels in history. Relatively high duties were established for manufactured woolen goods. The 1930 rate on fine raw wool in the grease was increased 3 cents to 34 cents per clean pound.

The tariff rates for wool listed below illustrate the trend in wool duties over the past 30 years:

Grade of Wool and Authority	Cents per pound, clean content
Wool finer than 44's:	
Current rate	
GATT, 1/1/48	25.5
Previous rates	
Tariff Act of 1930	34.0
Tariff Act of 1922	31.0
Wool finer than 40's but not finer than 44's:	
Current rate	
Argentina Trade Agreement, 11/15/41	17
Uruguay Trade Agreement, 1/1/43	17
GATT, 7/31/48 (T.D. 51970)	17
Previous rates	
Tariff Act of 1930	29
Tariff Act of 1922	31
Wool not finer than 40's (not used in manufacture of carpets)	
Current rate	
Argentina Trade Agreement, 11/15/41	13
Uruguay Trade Agreement, 1/1/43	13
GATT, 7/31/48 (T.D. 51970)	13
Previous rates	
Tariff Act of 1930	24
Tariff Act of 1922	1/ 12

1/ On actual weight; clean content equivalent would range up to approximately 20 cents, depending upon scoured yield.

Some of the duties established under the 1930 Tariff Act were subsequently reduced by bilateral agreements with such countries as Argentina, Uruguay, and the United Kingdom. These individual country agreements were authorized with the passage of the Trade Agreements Act of 1934, under which concessions granted one country were granted to all other countries. The General Agreement on Tariffs and Trade of 1948 in general reduced the duties on wool 25 percent, the last general reduction in the rates. The current customs duty on grease wool finer than 44's is 25½ cents per clean pound.

The tariff is relatively more effective in supporting wool prices to domestic producers when prices are low than when they are high. With duties on raw wool at a fixed rate per pound, protection becomes relatively less percentage-wise as wool prices increase. Similarly, protection in terms of purchasing power becomes relatively less with increases in the level of prices of things that growers buy.

While the tariff has proven to be feasible administratively, certain difficulties have detracted from its effectiveness. For example, certain native or unimproved wools are permitted to enter the United States at a reduced rate (13 cents per clean pound imported in the grease) when used for apparel purposes. This group is often referred to as the "name" wools and include such types as Donskoi, Smyrna, Cordova, Scotch Highland, etc., names which designate the origin of the wool or its general character or color. These wools are supposedly of coarse fiber diameter, non-homogeneous character, or off-color. While the quantities of these "name" wools entering this country for duty purposes are very small, it is believed that some of them have been improved since 1922 when the tariff classification was established. The tariff classifications should be brought up-to-date to make the tariff more effective.

Price Relationships - Foreign and Domestic Wool

The tariff on wool tends to maintain prices of domestic wool above the world market level, when there is both a free flow of wool to the United States and a free market for domestic wool.

Imported wools generally command a premium over domestic wools of the same grades because of uniformity and better preparation of the foreign wools. Most imported wools are skirted, classed, and packed in compressed bales. Domestic wools are packed in bags as they are shorn, and are sold with little or no further preparation. The much greater uniformity of the imported wools means lower costs to mills and top makers in processing. In many mills most foreign wools are no longer sorted, but are "dumped" or "trapped" which involves much less expense than handling domestic wools. The greater cost of processing domestic wool because of the necessity of sorting much of it is its most important single price disadvantage.

Although the tariff tends to maintain a differential between world prices and domestic prices, the level of domestic prices is particularly sensitive to supply and demand conditions in the United States. Also price support programs and other Government policies have tended to alter the relationships between prices of domestic and foreign wool. Largely as a result of Government policy, prices of domestic wools during the period 1940-46 were substantially above duty paid prices of approximately comparable imported wools.

When the Government began to place large military orders for wool textiles in 1940, the War Department, under the provisions of the Buy American Act of 1933, required the use of domestic wools as long as they were available in the grades needed. In 1941 the War Department, in order to encourage an increase in domestic production, allowed substantial differentials in favor of domestic wools when used in military fabrics. The OPA ceiling prices for both domestic and foreign wools, which were put in effect in February 1942, were based upon market prices that prevailed late in 1941, which favored domestic wools. The OPA ceilings became the C.C.C. purchase prices under the domestic price support program. Prices of both foreign and domestic wools changed little during 1942-45 due to the stabilization policies followed by the British and United States Governments.

Selling prices of the C.C.C. which had been the same as purchase prices, were reduced in November 1945 and again in February 1946. But as the C.C.C. was prohibited by law from selling below parity, selling prices were raised as parity increased. Effective August 5, 1947, C.C.C. was authorized to sell wool without regard to parity.

Price advances for foreign wools from September 1946 to mid-1951 were greater than for domestic wools. With the improvement in the market, domestic stocks were liquidated during this period.

The decline in wool prices in 1951 and the resumption of price support activities in early 1952 again reversed these relationships. Since late 1951 prices for a number of foreign wools, duty-paid Boston, adjusted for the preparation differential, generally have been lower than prices for similar domestic wools. As a result, domestic wools from the 1952 and 1953 clips have been accumulating as C.C.C. stocks, while our mills are consuming more and more imported wools.

PART II - WORLD TRENDS

WORLD PRODUCTION OF WOOL

World production of apparel wool is concentrated very largely in five non-industrialized Southern Hemisphere countries--Australia, New Zealand, Union of South Africa, Argentina, and Uruguay. These countries account for approximately 80 percent of the total production of apparel wool and for more than 90 percent of the apparel wool entering international trade. New Zealand, Argentina, and Uruguay produce mostly medium grades of apparel wool, while Australia and the Union of South Africa produce most of the world's export supply of fine-grade merino apparel wools.

Practically all of the wool produced in the United States and about 70 percent of the production of continental Europe and the United Kingdom is of the apparel type; however, most of the wool produced in these areas is consumed domestically and does not enter world trade as raw wool. Except for the United States, the United Kingdom, the five Southern Hemisphere countries, and a few other areas in Asia and South America, the rest of the world produces mostly coarse or carpet wools, most of which are admitted into the United States duty free.

World production of apparel wool is relatively stable, with year-to-year fluctuations depending to a large extent on weather and feed conditions (fig. 9). In Australia, the Union of South Africa, and Argentina especially, sheep raising and production of wool are particularly susceptible to drought and other extreme weather conditions. In recent years the world output of apparel wool has fluctuated around 3 billion pounds, grease basis, (1.8 billion pounds, clean basis) with a high of nearly 3.4 billion pounds in 1941 and a low of 2.9 billion pounds in 1947. (See Appendix table 21.)

World production of all wool (apparel and carpet) achieved a wartime peak of 4.2 billion pounds in 1941 with most of the increase in the major wool-exporting countries. After 1941 world production turned downward and continued to decline until a postwar low of 3,710 million pounds was reached in 1947. The decline in the world total reflected a destruction of flocks in Europe during the war, the less profitable position of the sheep enterprise relative to alternative enterprises in a number of countries, the unfavorable outlook for wool prices, and drought, particularly in Australia and Argentina.

Since 1947 world production has increased at a substantial rate each year under generally appreciating price levels and favorable weather conditions. In 1952 a new record of 4,290 million pounds (about 2,500 million pounds clean basis) was produced.

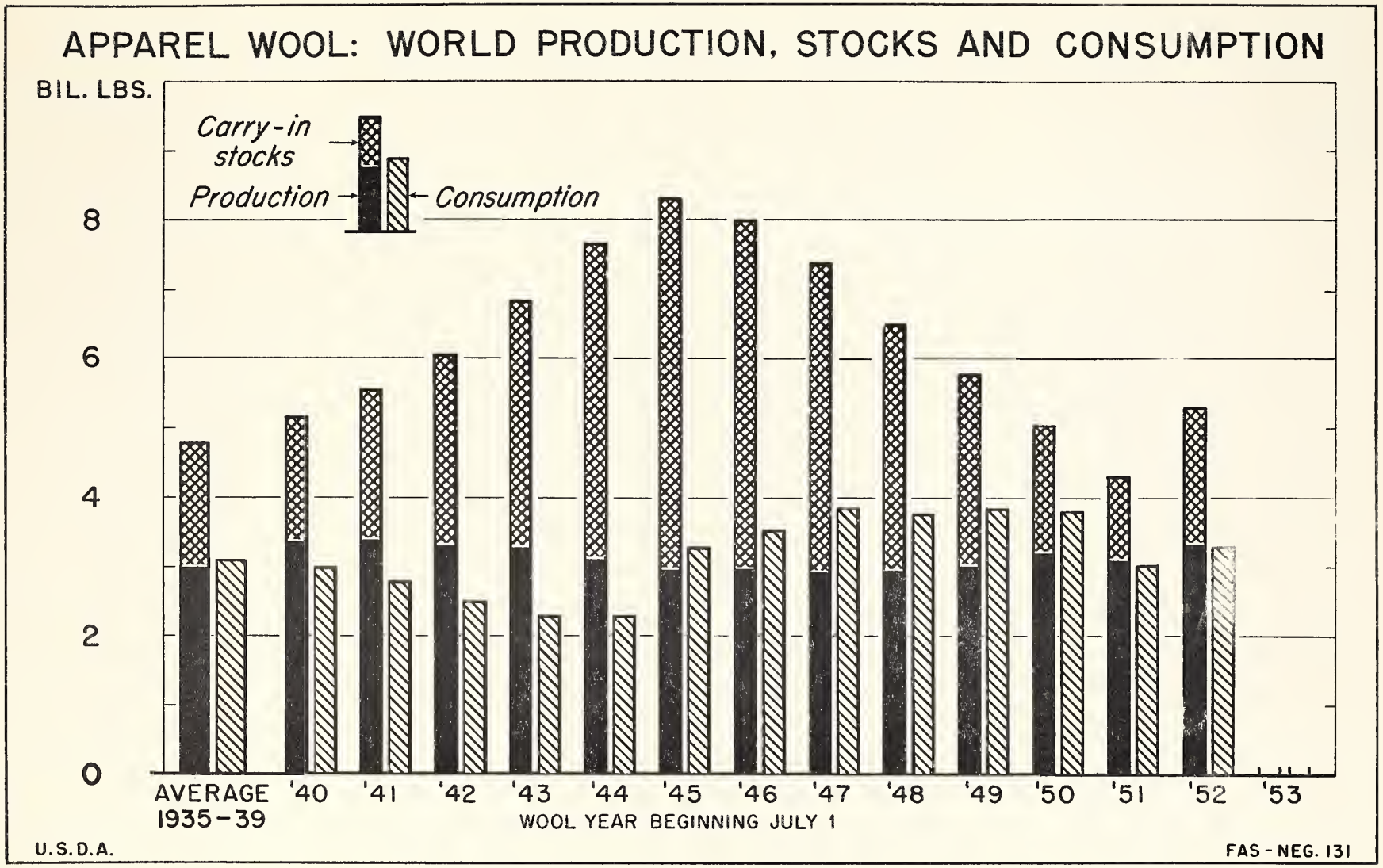
The most significant change in the production of wool has been the sharp reduction in output in the United States, which was down to about 289 million pounds, greasy shorn basis, in 1952, from the wartime average of 477 million pounds and the record high of 502 million pounds of 1942. Production in continental Europe and the United Kingdom has gradually recovered and by 1952 it was about 10 percent above the World War II average and about equal to the 1936-40 average. In all of the five major Southern Hemisphere producing countries except the Union of South Africa, production in 1952 was considerably above the prewar average. It was at record levels in Australia, New Zealand, and Uruguay, and about a fifth to a sixth below record levels in South Africa and Argentina.

WORLD CONSUMPTION OF WOOL

World consumption of wool in 1934-38 was estimated at about 2 billion pounds a year, clean basis. This was made up of approximately 1.6 billion pounds of apparel wool and about 0.4 billion pounds of carpet wool. The Northern Hemisphere countries--United States, United Kingdom, continental Europe, and Japan--accounted for about 90 percent of the total.

Consumption patterns changed greatly during World War II as continental Europe and Japan were separated from Southern Hemisphere supplies. Consumption in the United States and the United Kingdom increased greatly. Consumption in the Southern Hemisphere countries also increased.

From 1946 to 1950 world consumption was substantially higher than prewar, and higher than current production. By 1949, new consumption patterns had developed. Features of the new patterns include the much higher rate of consumption in the United States and Italy and the trend toward self-sufficiency in woolen textiles in some of the smaller European consuming countries,


APPAREL WOOL: WORLD PRODUCTION, STOCKS AND CONSUMPTION
BIL. LBS.
Carry-in stocks
Production
Consumption
8
6
4
2
0
AVERAGE 1935-39
'40
'41
'42
'43
'44
'45
'46
'47
'48
'49
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'51
'52
'53
WOOL YEAR BEGINNING JULY 1
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particularly Sweden, Switzerland, and the Netherlands. Probably the most significant change in both trade and consumption patterns has been the increase over prewar of more than 230 percent in consumption in the five major surplus-producing countries.

World consumption of all wool reached an all-time high in 1950. Civilian purchases, already at a high level, were increased with scare buying brought on by the Korean incident. Despite increased military acquisitions, consumption dropped off considerably in 1951 and stocks of raw wool were carried over in South America. But by 1952 an increasing rate of consumption was again noted and world consumption was in approximate balance with world production.

WORLD TRADE IN RAW WOOL

During 1934-38 about two-thirds of the world's production of apparel wool moved in international trade. With the exception of the United States and the Soviet Union, the principal consuming countries imported 80 to 90 percent of their wool requirements and the principal producing countries exported 80 to 90 percent of their production. The United Kingdom imported an average of nearly 600 million pounds, actual weight, of apparel wool annually during 1934-38, almost a third of world imports. Continental Europe took over 1 billion pounds annually. Only about 4 percent of the total was taken by the United States.

During the war, annual imports into the United States were several times as large as those of prewar, but shipments to continental Europe and Japan were practically zero. Exports from the five Southern Hemisphere surplus-producing countries were only about three-fourths as large as in the 1934-38 period.

International trade in raw wool increased sharply in 1945-46 as trade with continental Europe was resumed. An excess of exports over current production after the war was made possible by the wartime accumulation of stocks.

By 1952 both Germany and Japan had regained their prewar importance as wool consumers. The most significant change in the trade picture, however, has been the increased dependence of the United States on foreign sources of supply. A higher level of consumption and a lower level of domestic production than prewar have made the United States second in importance only to the United Kingdom as an importing Nation.

WORLD STOCKS OF RAW WOOL

With the exception of the abnormal conditions at the end of World War I, carryover stocks of unsold wool in the major exporting countries during the interwar years were small relative to production. Such limited information as is available, indicates that stocks of raw wool in the consuming countries varied considerably from year to year. The average world carryover of raw wool for the years 1934-39 was about 1.8 billion pounds, grease basis. (See Appendix table 21.)

At the end of World War II, world stocks of wool were the largest on record--about 5 billion pounds, grease basis. This was about three times the 1934-39 average and about 60 percent larger than estimated world production of apparel wool in 1950. These stocks accumulated as a result of the reduced wartime consumption of wool in continental Europe and Japan which, in prewar years, had consumed about 75 percent of the wool entering international trade. The reduction in consumption in these countries was only partially offset by the increased consumption in North America.

The greater part of these surplus wools were British Empire wools owned by the British Government. In order to stabilize prices and gain control of supplies the British Government entered into an agreement early in the war with the Governments of Australia and New Zealand to buy their entire exportable surplus of wool for the war period and one clip yearly thereafter. Similar arrangements were later made with regard to the South African production. Large stocks also accumulated in South America, particularly in Argentina.

While trade stocks of wool in the United States at the end of World War II were considerably larger than prewar, the stock-consumption ratio was about the same as prewar. In addition to these trade stocks, much of the domestic wool produced in the United States accumulated in the hands of the Government under its price-support program for domestic wool growers.

During the first postwar season (1945-46) stocks owned by the British Government were reduced from 3.2 to 2.0 billion pounds and stocks in Argentina and Uruguay were reduced from 338 million pounds to 245 million pounds. Only a small part of this reduction entered into consumption during this season, however. The large shipments in 1945-46 reflected, in part, the rebuilding of stocks in trade channels in continental Europe.

In the United States, stocks of wool continued to increase during 1945-46 despite a record peacetime rate of mill consumption. Excluding stocks stored for the British Government, stocks of apparel wool in the United States totaled 931 million pounds, grease basis, on July 1, 1946--three times the average stocks in 1934-38. Mills and dealers held 432 million pounds, of which 319 million pounds were foreign wool, and C.C.C. holdings totaled 499 million pounds.

The high rate of world consumption of wool following World War II--between 15 and 20 percent in excess of current production--resulted in the disposal of the large wartime accumulation. All of the C.C.C. holdings were disposed of by mid-1950, and the last of the wools owned by the Joint Organization were sold in 1951.

There was considerable carryover of wool in producing countries at the end of the 1951-52 season but that has largely moved into consumption. The world wool industry is on a current basis. However, non-trade stocks are held by the C.C.C. and by the United Kingdom Government in its strategic stockpile. There will likely be some year-to-year dislocations in the marketing of the world wool clip, but over a period, large accumulations of new wool are not likely.

WORLD PRICES

World prices generally responded quickly to the stimulus of war conditions in 1938-39 but they declined with the loss of the continental Europe and Japanese markets and the Governments of the United States and the United Kingdom took steps to purchase the production of the major exporting countries. Limited markets and controlled prices were in effect until mid-1946, when wool marketing was returned to the growers.

Heavy postwar demand for wool allowed the absorption at steadily increasing prices of more than 3 billion pounds of wartime accumulated wool as well as the current clips in the period July 1946 through June 1950

At the time of the Korean incident in June 1950, world consumption and production were in approximate balance and World War II stocks had been liquidated. The immediate effect was an increase in prices for wool and by March of 1951 prices had reached unprecedented levels. By March 1952 prices had declined to pre-Korean levels and difficulties in marketing wool were being experienced in various countries.

World prices have generally appreciated since March 1952 as world consumption recovered, trade stocks in consuming countries were increased, and about 115-120 million pounds of wool (clean basis) were taken over by Commodity Credit Corporation in price support operations and by the United Kingdom for its strategic stockpile.

By July 1953 it appeared that current world production and consumption of apparel wool were again in approximate balance. There is no appreciable abnormal carryover in the major producing countries. However, another record clip is forecast for 1953-54 and the better-than-average stock position of mills plus government stocks probably will preclude any significant change in world wool prices.

PART III - CURRENT DOMESTIC WOOL SITUATION

The preceding sections present a background discussion of the long time trends in production, consumption, marketing and price in the sheep and wool industry, both here and abroad. This section will consider some of the recent developments in light of their impacts upon the immediate problems that face the domestic wool industry.

The current difficulties of the domestic wool industry are considered in the following sequence: (1) The decline in both production and consumption; (2) the increase in imports; (3) the increasing carryover of domestic wool; (4) the problems of price; and (5) the current difficulties in carrying on a price support program.

DOMESTIC PRODUCTION AND CONSUMPTION

Production and consumption of wool in the U. S. are both down to relatively low levels. The decline in production has been greater proportionately than the decline in consumption.

The production of domestic wool during the current season is estimated at about the same level as in 1952 (127 million pounds, scoured basis) or 38 percent less than in 1935-39 and 43 percent less than the peak year 1942. The estimated production of shorn wool this year is less than two-thirds of the production objective established by Congress in the Agricultural Act of 1949, as amended.

Mill consumption in the current year is expected to be not greatly different from the 2 previous years. This would be about a third below the 1942 level, more than two-fifths below the record 1946 level, but a third greater than in 1935-39.

INCREASING IMPORTS

The share of the domestic wool market represented by imports has increased substantially. Imported wools represented over 71 percent of total mill consumption during the 1952 season compared with less than 20 percent during the prewar period, 1935-39, and 58 percent during the period 1946-50 when C.C.C. stocks were being utilized. It is expected that imports will again form an unusually high proportion of U. S. mill consumption in 1953.

In addition to the imports of wool, imports of wool tops were unusually heavy during the 1952 season, amounting to 21.4 million pounds, the equivalent of approximately 25 million pounds, scoured basis, of raw wool.

INCREASING CARRYOVER OF DOMESTIC WOOL

Accompanying the recent increase in utilization of imported wool has been an increase in stocks of domestic wool and a decrease in our stocks of imported wool. Stocks of domestic wools increased from 58 million pounds, scoured basis, on April 1, 1952, to 99 million pounds on April 1, 1953. At the same time U. S. stocks of foreign wool decreased from 75 million pounds, to 64 million pounds, scoured basis, even though imports were slightly higher than in the preceding year.

The carryover of domestic wool from the 1952 season represents an abnormal peacetime situation. Stocks on April 1, 1953 were the highest since April 1, 1949--they were the equivalent of more than three-fourths of the 1952 season's production of 127 million pounds, scoured basis. Total stocks of domestic wool on hand April 1, 1952 were the equivalent of approximately one-half the 1951 production, while the carryover of domestic wool from the four prewar seasons 1936 to 1938, averaged about 68 million pounds, scoured basis, or approximately one-third of the average season's production.

PRICE PROBLEMS

Prices received recently by farmers for domestic wool have been unfavorable compared with the standards set by the price support program. The average price received by producers for wool during each month of the marketing season from April 1, 1952 through March 1953 was from one to four cents below the 1952 clip support level of 54.2 cents. Producers' prices strengthened somewhat during the first three months of the 1953 marketing season, but by September 15, they had dropped back to less than the reduced level of support for the 1953 clip. And continuing imports at current levels likely will have a depressing effect on prices under present conditions.

Prices for a number of grades of imported wools in the Boston market have been low compared with domestic prices. Domestic market prices for a number of grades of foreign wools, comparable to classes representing about 15 percent of our domestic clip, have been below support levels for domestic wools, after allowing for differences in market preparation. (These include Territory Low 1/4 Blood; Territory Common and Braid; Fleece Fine short French combing and clothing; Fleece Staple and good French combing 3/8 Blood as well as 1/4 Blood and Common and Braid). Similarly adjusted duty paid prices for another group of imported wools have been below the support prices plus carrying charges of comparable domestic wools which comprise another 18 percent of our domestic clip. These include all graded Territory wool coarser than Fine and Low 1/4 Blood Fleece.

When a producer obtains a government loan on his wool he incurs certain carrying charges including storage and handling charges, and if he redeems his wool in order to sell it on the open market, he must pay interest on the loan as well as a sales commission to the handler. It has been estimated that these charges may average some 3 to 4 cents a pound (grease basis) for an average storage period of 8 months. Thus, it is evident that recent prices for classes of wool representing more than a third of the clip have not been high enough to enable producers to pay off their loans and redeem their wool for sale in the open market.

PRICE SUPPORT PROGRAMS

The price support program for wool is undertaken pursuant to the provisions of the Agricultural Act of 1949, as amended. Section 201 of this Act makes it mandatory for the Secretary of Agriculture to support the price of wool at such level between 60 and 90 percent of parity as the Secretary of Agriculture determines necessary to encourage an annual production of approximately 360 million pounds of shorn wool. Wool is the only agricultural commodity for which Congress has set out a specific quantitative production objective. Since domestic production has been far short of the legislative goal, the price support level has been set at 90 percent of parity since April 1, 1950 in an effort to encourage producers to increase production toward the legislative goal. The support level established for the 1953 season is equal to a national average price of 53.1 cents per pound, grease basis.

The price support operations are being carried out by means of a non-recourse loan program for producers of shorn wool and by a purchase program for pulled wool. Details of the program were published in the Federal Register on April 17, 1953 (18 FR 2169).

The objective of the wool price support program is to give domestic producers an opportunity to market their wool in an orderly manner through normal trade channels, and at prices not less than 90 percent of parity. It is not the intention of the program nor of the legislation under which it is operated to establish the Government as the outlet for producers' wool. This would defeat the purpose of the production goal objective and the non-recourse loan program.

The non-recourse loan enables the producer to take advantage of any market price increase to above the loan level plus carrying charges by redeeming the loan. The producer does not assume any liability in event the market price drops below the loan level. But if he wants to redeem his wool to take advantage of an increase in market prices he must pay certain carrying charges. As long as market prices are below support levels, domestic wool is held off the market, and most if not all of the wool that comes under the support program is "frozen" as far as current domestic consumption is concerned. Meanwhile, domestic mills continue to meet their needs from foreign markets and domestic wool piles up.

The C.C.C. has had to purchase substantial quantities of wool and has incurred losses totaling $92,200,000 on its wool price support operations in previous seasons. Of this loss, approximately $26,000,000 consisted of carrying charges, including storage costs, transportation, grading, etc. The balance of the loss resulted from the necessity of reducing selling below purchase prices in order to dispose of the wool. This was the largest loss incurred on any storable commodity during the period July 1, 1943 to June 30, 1952.

As the result of the 1952 wool price support operations, the Commodity Credit Corporation acquired title to approximately 100 million pounds of wool--almost 40 percent of all domestic wool produced in 1952. Practically all of this wool is in C.C.C. hands as of September 1953. Possible C.C.C. loss on this and on some 50 million pounds of wool which may be acquired from the 1953 clip will depend, to a great degree, on the duty paid cost of imported wool, and on the period of time C.C.C. is required to carry the wool before it can dispose of it without interfering with price support operations.

As long as duty paid prices on some grades of imported wool remain below domestic support prices, a large volume of imported wools will continue to move to the mills, domestic wool will tend to go into stocks, and it will be difficult to dispose of these stocks. Large stocks have a depressing effect on prices.

PART IV - DEVELOPING THE DOMESTIC INDUSTRY AND FOREIGN TRADE

REQUIREMENTS AND LEVELS OF PRODUCTION

Both meat and wool are important in our national economy. Lamb is an important part of the diet in the populated areas of the East and the Pacific Coast, and wool is one of the important raw materials needed for manufacture of clothing and other civilian and military goods. Our domestic production of wool is of great strategic importance in wartime.

Military Requirements

No substitute has been developed to completely take the place of wool in fabrics required by the Armed Services, although man-made fibers and other materials have been used to an increasing extent during the past few years in military fabrics formerly made entirely of wool.

Domestic production of wool falls far short of supplying U. S. requirements. During peacetime the United States normally is dependent upon southern hemisphere countries for much of its wool requirements. During mobilization or wartime our reliance on foreign supplies is even greater. 8/

During the five-year wartime period, 1941-1945, annual consumption of wool for military purposes averaged 588 million pounds, grease basis, or 310 million pounds scoured equivalent (table 9). Much of the wool required for the military had to be procured from foreign sources despite our high level of domestic production and the efforts of the War Department to encourage an increase in domestic production by allowing substantial price differentials in favor of domestic wools when used in military fabrics.

Table 9.- Wool consumption for military purposes, United States, average 1935-39, annual, 1939 to 1945

Period	Wool consumed	
	Grease basis	Scoured basis
	Mil. lbs.	Mil. lbs.
Average 1935-1939	6	3
1939	20	9
1940	96	43
1941	310	140
1942	850	442
1943	724	385
1944	483	254
1945	575	326

8/ In an article entitled "Conservation in Military Textiles," published in the Quartermaster Review, November-December, 1951, Dr. Stephan J. Kennedy indicates that our domestic clip "is averaging only about half" annual military requirements during World War II and "the foreign wool we are using today to supplement our domestic production requires shipping over sea lanes of minimum distances of 5,000 to 8,000 miles. To depend upon imports over extended supply lines in time of war is not realistic."

A similar type of situation prevailed following the outbreak of hostilities in Korea, despite the marked expansion in the production of synthetic fibers, and the accompanying substitution of synthetic and other materials for wool in various military items. Even though we had been at a high rate of military preparedness for several years and the stocks of wool accumulated under price support programs had only recently been liquidated, the United States had to enter the world market for large emergency orders of wool for military purposes. We were forced to compete with other countries for available supplies. What happened following our entry into World War II and again following the outbreak of hostilities in Korea doubtless would happen again in the event of another military emergency. Current domestic production is the equivalent of only 40 percent of our annual military requirements during World War II. Thus, for defense reasons alone, it appears essential that the United States have a sound and healthy sheep industry.

Availability of Supplies to Meet Civilian Demands

A sizeable domestic production provides a cushion against fluctuations in demand for wool and in foreign prices. The United States mill consumption of raw wool fluctuates widely from year to year due to style changes and changes in the demand for wool textiles. Ready availability of raw wool supplies is an important factor in the mills' operations and hence stocks of finished products for consumers.

Unnecessary dependence upon imports of foreign wool has a tendency to encourage manufacturers to turn increasingly to synthetic and other fibers during periods of short supply and high world prices for wool. Such fibers are more readily available in the United States than other countries. Control of the production and prices of such fibers permits them to make inroads upon normal outlets for wool, particularly in periods of short supply and high prices of wool, even though the consumer may prefer wool at somewhat lower prices.

The Domestic Sheep Industry as a Source of Meat

As consumers of lamb and mutton, the American people are interested in the maintenance of an abundant supply of meat. Except for some trial shipments from New Zealand, very little lamb or mutton has ever been imported into this country. The difficulties experienced in handling and merchandising the frozen product and the excessive fat it carried have discouraged importations from other countries where supplies are available.

Domestic production of lamb in recent years has been unusually low. During the past five years consumption was equivalent to only 4.1 pounds per capita compared with 6.7 pounds during 1935-1939. Domestic consumers would use considerably more lamb than the small supplies that are now available.

With the rapid increase in our population which is in prospect, we will have need for the maximum production of meat consistent with our feed and forage resources. It would be in the interest of consumers, therefore, to maintain sheep numbers at least at a level which will utilize feed resources that would not otherwise be utilized or would be less efficiently utilized by other meat animals.

Effective Utilization of Feed Resources

While sheep are grown in all of the States, it is largely in the western sheep States that the sheep industry is important both from the standpoint of the agricultural economy of the area, and the operation of the individual farm or ranch. Little more than a fourth of our wool is produced in the native sheep States, where the raising of sheep is usually incidental or supplemental to other enterprises. The large-scale, range-type of sheep production in the West is the principal source of our domestic wool supply. Nearly two-thirds of this western production is in the States where the public lands are used for the maintenance of the flocks for at least part of each year, and nearly a half of it is on farms and ranches with 1,000 or more sheep.

In large sections of the West, the range land is marginal for any use except for grazing sheep. This is true of such lands as the Red Desert of Wyoming and similar poorly watered lands in such States as Utah, Nevada, and Idaho. It also is true of some of the more remote and rough alpine and sub-alpine summer grazing areas. The lambs and wool marketed from the western States form an important share of the "harvest" from the vast acreage of grazing land--a share that would not be realized if the sheep industry were not maintained.

Sheep utilize to economic advantage a complexity of grazing resources in the western range area. The forage and feed production of a varied pattern of privately-owned, leased, and public lands are fitted together to provide for the year-round maintenance of sheep. The mountain areas which are largely national forests generally are suitable only for summer grazing. The lower range areas, including public lands in federal grazing districts, are used to carry the sheep through the winter and much of the spring and fall. Privately-owned range or pasture lands are generally used for feed production and for grazing during the fall breeding and spring lambing periods. Often these seasonal ranges are widely scattered and sheep must be trailed long distances in their seasonal migrations--distances too great for the movement of cattle.

Some of the more remote sheep ranges in the West remain unutilized because of their inaccessibility, the relatively high costs involved in getting the sheep into them and out again, and the lack of qualified herders who are competent to take sheep into such areas. Also, with an end of the upswing in the cattle cycle in sight, the decrease in cattle numbers which probably will follow should make available additional range resources which can be utilized efficiently by sheep.

While less important in terms of current numbers, a number of farm areas also have opportunities to utilize feed resources more efficiently with sheep. For example, in the irrigated areas--especially the newly developed areas where abnormally large acreages of legumes are planted to build up soil fertility--sheep offer an efficient means of harvesting such crops, the aftermath of other crops, fence rows, and ditch banks. In some of the farming areas to the east where substantial acreages of "surplus" crops will be diverted to other uses, sheep also can be utilized advantageously to harvest the forage crops and the aftermath of other crops grown on the "diverted" acreage.

Level of Domestic Production

The 360 million pounds of shorn wool established by the Congress in the Agricultural Act of 1949, as amended, as a legislative objective for the domestic wool industry is about the level of domestic production in the prewar period, 1935-39. Including pulled wool, it would represent over 200 million pounds of scoured wool, or about 55 percent of our domestic consumption of wool during the last four years. As implied by this legislative objective, it would not be feasible for the United States to attempt to become self-sufficient in wool production. Nor does it appear feasible to increase domestic production sufficiently to meet any emergency defense requirements that might arise. However, with the need to alleviate our dependence on foreign sources in times of emergency, with the domestic need for all the wool and all the lamb and mutton that can be produced in this country, and with forage resources that would permit an expansion in sheep numbers, it would be desirable from the standpoint of the national economy if sheep raising were a sound, efficient, and profitable enterprise at a somewhat higher level of wool and lamb production than at present.

Increased world consumption and the disappearance of large world stocks have an important bearing on the level of domestic production. World consumption of apparel wool exceeded world production in six out of the last eight years and world stocks are no longer excessive. Although world production and consumption have been approximately in balance the last two years, the high level of foreign trade in wool since 1945-46 would not have been possible without a decline of over 3 billion pounds, grease basis, in world stocks.

The desirable level of domestic sheep and wool production depends upon the values attached to their strategic importance and to the efficient utilization of our production resources. It depends equally upon the efficiencies which can be achieved in the production, marketing, processing and distribution of domestic wool and its products. The desirable level of domestic sheep numbers will vary from time to time with changes in the production cycle, feed supplies, numbers of other livestock, and cost-price relationships. One analysis of domestic wool requirements and sources of supply indicated that the grazing and feed resources of the United States were sufficient for about 37 million head of stock sheep and still have the total of all grazing animals in balance with these resources. Annual wool production from such a number would be around 290 million pounds of shorn wool and 45 million pounds of pulled wool, or the equivalent of about 160 million pounds, scoured basis, as compared with the 127 million pounds produced in 1952. 9/ Another analysis, in which a different set of cost-price relationships was assumed, indicated that a balanced livestock population in this country would include about 31 million head of stock sheep and an annual production of about 260 million pounds of shorn wool and about 40 million pounds of pulled wool, or the equivalent of about 144 million pounds of scoured wool. 10/

The level around which numbers of stock sheep should fluctuate should be a level which would assure effective utilization of feed resources and, without

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9/ Domestic Wool Requirements and Sources of Supply, U. S. Department of Agriculture, June 1950.

10/ Agricultures Capacity to Produce, U. S. Department of Agriculture, June 1952.

undue increases in subsidies, equitable returns to growers for efficient production of qualities of wool and lamb products that can compete effectively for the consumer's dollar. Low production costs of foreign wools, together with the passing of the frontier and the associated increase in domestic producers' costs, doubtless will necessitate a continuation of some type of assistance for the domestic sheep industry if it is to be maintained at a desirable level.

Rate of Increase Limited

The effect of moderately higher levels of domestic wool production on our economy and upon world trade would depend upon the speed with which they were attained, the methods used in increasing production, and our ability to increase domestic consumption of wool. Both biological and economic factors probably will preclude a very rapid increase in wool production. Many producers, especially the larger western producers, are limited in the increases in production which they can make except through the adoption of more efficient production practices, disease control practices, better breeding, and the like. Resultant increases in production would come slowly. Meanwhile our population is increasing at a rate of nearly 3 million per year and, even without any increase in per capita consumption, we will need more wool. As is indicated later, we do have opportunities to increase domestic wool consumption by effecting economies in the production, marketing, processing and distribution of wool and its products, by developing new and improved qualities and uses of wool, and by a more aggressive promotional effort. These too, are likely to come slowly but it appears probable that a vigorous effort to increase per capita consumption, together with the increased consumption required by a larger population, could keep pace with or exceed the moderate increase in production which is probable.

PRODUCTION PROBLEMS AND PROGRAMS

Improvements in production practices and in the efficiency of production are needed to lower production costs and improve the competitive position of sheep and wool. Neither the efficiency with which sheep utilize feed in producing wool and meat, nor that with which farmers and ranchers are using their combined resources in the production of sheep and wool have improved as much as in other farm animals.

A number of things could contribute materially to more efficient production and to a stabilization of the domestic sheep industry at a desirable level. The more significant of these include:

1. More Effective Control of Parasitic and Infectious Diseases.- Over 80 different kinds of parasites occur in or on sheep in this country. Despite the development of controls through the use of chemicals, parasites continue to cause an estimated loss of over 100 million dollars annually--the equivalent of nearly a fifth of the gross value of all sheep and wool produced in 1952. The substantial losses which parasites continue to cause can be lowered significantly by two positive steps: (a) More effective use of known methods of diagnosis and treatment; and (b) through research to develop improved chemical treatments for the removal of parasitic infections and for pasture treatment to kill infective stages of the parasites and/or the intermediate hosts which transmit them.

Infectious diseases also are responsible for heavy losses among sheep in spite of the fact that information is available for the control of many of the more important bacterial and virus diseases. A more effective use by sheepmen and veterinarians of modern methods of diagnosis and treatment would reduce significantly the losses caused by such diseases. Vibrionic abortion and the new virus disease, blue tongue, are not satisfactorily controlled by known methods and more research is needed. These diseases have the potentiality for causing extensive death loss and even greater economic loss because of adverse effects on condition, damage to wool, interference with reproduction, and the production of an inferior grade of lamb or mutton.

2. Intensified Basic Research on Nutrition Problems, Including Vitamin Requirements for Growth and Reproduction, the Effects of Various Nutritive Factors on the Yield and Quality of Wool, More Economical Means of Supplementation of Pastures and Range Forages, the Formation of Urinary Calculi in Lambs, and the Effect of Supplemental Sulfur on Production of Wool.- Sheep depend primarily on forage for their feed and less improvement has been made in their rations than for poultry and swine. A pound of gain in chickens can be produced with approximately 25 percent less feed and time than were required a decade ago. Similarly, for swine the decrease has been about 15 percent during the past 15 years during which time active programs for improvement have been under way. Similar progress with sheep would be more difficult to achieve because of the high forage content of their ration, but a better understanding of their nutrition problems could result in substantial reductions in their cost of production.

3. Improvement in Quantity and Quality of Wool Production Through Breeding.- Because of the increasing importance of lamb and mutton as a source of income, farmers and ranchers have given more and more attention to the lamb and mutton producing capacity of their flocks. They will continue to emphasize meat production as long as that is the major source of their income. But there is much that many ranchers could do to improve both the quantity and quality of their wool production through improved breeding practices and the adoption of one of the improved or new breeds which have been developed. The basic range breed, the Rambouillet, has been improved for reduced face cover, lamb production, wool quality and wool yield. The Columbia, a new breed which is particularly adapted to good range conditions in the northern range area, is a large sheep shearing heavy fleeces of 3/8 blood wool and weaning heavy lambs. The Targhee is another new breed which has been developed for slightly less favorable range conditions than the Columbia. It is about midway between the Rambouillet and the Columbia in size, fleece characteristics and lamb production. In time, a breeding program which puts more stress on quantity and quality of wool and less on carcass characteristics could increase both the quantity and quality of wool produced. But, because of the economic importance of mutton to the producer, it is probable that greater progress can be made by continuing to stress both mutton and wool in our breeding programs.

Better breeding practices are needed on many farms and ranches. In Texas and some of the range areas, for example, adoption of practices such as flushing, or supplemental feeding of the breeding flock prior to the breeding season, and better care during the lambing season would increase the lamb crop, reduce death losses, and improve both the wool clip and the growth rate of lambs. These same objectives have been achieved in a research program currently under way on a cyclic crossbreeding scheme using sheep of the mutton breeds. This work will be especially pertinent in increasing sheep production in the native sheep States.

4. Improvement in Farm and Ranch Management Practices and in the Efficiency with which Production Resources are Used in the Production of Sheep and Wool.- The family-operated sheep ranches for which data are available are not being operated any more efficiently than they were in the pre-drought period 1930-33. In terms of production per unit of input, they are even less efficient than they were 10 years ago. (See Appendix table 8.) Many of the technological developments which have enabled American agriculture as a whole to double its production per man-hour since 1930, compared with only a fifth to a third increase on these sheep ranches, have not been applicable to ranching in the semi-arid West. But the wide variation between individual producers in the size of their lamb crop, death losses, rate of lamb growth, and weight of fleeces marketed is evidence that many producers could improve their efficiency and lower their production costs by adopting some of the improved management practices which are available to them.

The lamb crop in the native States has averaged 100 percent during the last 10 years. In the western range States, other than Texas, it has averaged 86 percent. But in Texas, where nearly a fifth of our ewes are located and where most of the sheep are under fence and hence do not have the constant care of a herder, the lamb crop during the last 10 years has averaged only 68 percent. While drought doubtless has reduced the Texas lamb crop in recent years, many Texas ranchers have increased their lamb crops to 80 to 90 percent by adopting improved range and other management practices and by giving their flocks a little more care. They have reduced their death losses, increased their turn-off of both lamb and wool, and reduced their costs of production. If the average lamb crop in Texas were increased from 68 to 80 percent, about a half million more sheep would be produced annually.

5. Increased Grazing Capacity and Intensification of Soil and Range Conservation on both Public and Private Lands.- Greater effort should be made by land owners and operators, both private and public, to expand the forage carrying capacity of farm and range lands. Noteworthy progress has been made by Federal agencies and individual operators in developing and adopting soil and grass conservation and improvement practices. Such programs as reseeding, fertilizing, and improving the composition of pastures should be accelerated. Expansion of forage carrying capacities also would result from wider adoption of improved pasture and range management practices, such as better planned watering and salting practices, and deferred and rotated grazing of grass resources.

In the western States where vast areas of public lands are grazed in conjunction with privately controlled grazing and feed-producing lands, it appears especially important that forage improvement and management practices be accelerated and intensified on both publicly and privately owned lands. In some areas economic utilization of the forage is largely restricted to grazing by sheep. Any expansion of carrying capacity of such lands, therefore, should encourage increased wool and lamb production.

Investigations by Federal and State agencies to determine improved methods for, and the desirability and economic feasibility of such activities as clearing brush land, controlling poisonous weeds, and reseeding with more nutritious grasses should be stepped up. Efforts to develop new and improved forage plants, and grazing capacity experiments on various types of ranges should be continued and expanded.

The level and stability of sheep production in large areas of the West are affected by the dependability as well as the carrying capacity of the public lands which are used in conjunction with and as an integral part of range operations. Ways need to be found to encourage users of such lands to adopt more improved salting, bedding and herding practices to increase and stabilize carrying capacities. And where the Federal Government is not in a position to make the necessary investments in stock watering facilities and fence construction on the public ranges, the ranchers who use these lands should be encouraged to do so.

6. More Effective Development and Dissemination of Information on the Adaptability of, the Necessity for, and the Economic Effects of Improved Production Practices.- Expanded efforts are needed to appraise the adaptability and the economic effects of various improved production practices under different farm and ranch conditions. Information on the effectiveness of such practices on size of lamb crop, death losses, turnoff and quality of wool and mutton, and on net returns to farmers and ranchers is becoming increasingly important to sheep and wool producers.

Needed too, is a concerted effort to educate producers as to the increasing necessity for more efficient production. Increasing competition from synthetic and other fibers, as well as the need for an expanding foreign trade, preclude the reestablishment of the sheep industry on a sound and prosperous basis by merely imposing additional trade barriers. Such barriers would tend to protect the domestic producer from imported wools. But they also would retard rather than encourage foreign trade, and, in the long run, they would tend to price wool out of the market by increasing the competitive position of other fibers. Producers must be made aware of this change in their competitive position which has accompanied the development and improvement of other fibers. They must be informed of their opportunities to help meet this new situation through the adoption of more efficient production practices. And producer groups must accept a major share of the responsibility for informing individual producers of their changing position and of the various opportunities at their disposal to meet it.

7. More Effective Control of Dogs and Predators in Areas Where They are a Menace to Sheep Production.- In the western sheep States, where the heaviest losses are from coyotes, new methods of control have greatly reduced the numbers of these animals in the past ten years. Use of newly developed poison baits and other measures offer the prospect of eventually eliminating coyotes from most of the open range country. Control of these animals will require further concerted effort on the part of the Fish and Wildlife Service, State Game Commissions, stockmen, and other interested persons. There is always the possibility of continued reinfestation of range areas by coyotes from other areas where little effort is being made to eliminate them. Many of the newer control methods for coyotes are not feasible in farming States or closely settled ranching areas.

To cope with the dog problem, a set of model dog laws should be developed by the Federal Government for submission to States and local governments, which, if enacted and enforced, would tend to reduce losses of sheep, particularly in the native sheep States. Information on sheep losses due to dogs, the suggested model dog laws, and the need to reduce losses should be disseminated widely by the Government and other appropriate agencies.

8. Fair and Equitable Returns Commensurate with the Value of Resources Used and with Returns from Alternative Enterprises.- Like any other group of producers, sheep and wool producers must have fair and equitable returns if they are to stay in business. Their returns in 1952 generally were something less than that. Prospects for continued competition from imported wools suggest that protection against such competition will need to be continued if the domestic sheep and wool industry is to be maintained at a desirable level. But, conversely, continued competition from other domestic fibers suggests that producers can not expect satisfactory returns for anything but efficient production. Specific means of assuring growers equitable returns are the subject of the final section of this report.

IMPROVING MARKETING, MANUFACTURING, AND DISTRIBUTION

Improvements in marketing grease wool, manufacturing yarns and fabrics, fabricating apparel, and in wholesaling and retailing may contribute in an important way toward promoting a sounder and more prosperous wool industry. Making improvements in these services is emphasized because they account for about 86 cents of the consumer's dollar paid for wool apparel and household goods

Marketing Domestic Grease Wool

Preparing for sale to manufacturers.- Domestic wools are widely criticized and often discounted in price, as compared to foreign wools, because they are less uniform and because they are contaminated with black and stained fibers, dung locks, and non-scourable branding paints. Preparation practices may be improved so that domestic wool will be more competitive with foreign wool. This is largely a problem of education through the growers pocketbook. Growers need to use only scourable paints where branding is necessary. Black fiber contamination can be prevented in clips from white faced sheep by shearing black or black faced sheep last and/or by careful sweeping of shearing boards. Dung lock contamination can be prevented by crutching before shearing and/or removal of tags at shearing. Slow progress in this work can be expected unless growers are well paid for preparing wools that are free of undesirable contaminants.

Further research and experience may show the ways and means as to time, place and operator for improving uniformity through grading, skirting and sorting. Grading at shearing sheds is practical in some locations where the clips are large or fairly uniform and when adequate facilities and qualified graders are available. Skirting might also sometimes be feasible under these conditions. The bulk of the domestic wool clip, however, can probably best be graded, skirted or sorted in warehouses or mills. Experiments need to be carried out to determine under what conditions it might be profitable to sort domestic wool prior to sale to manufacturers.

Pricing and selling on the basis of merit is fundamental to providing incentive for growers to produce the most profitable types of wool and do a good job of preparing it for market. Domestic grease wool is a complex commodity that is usually sold by private treaty at prices negotiated on the basis of estimated quality and clean fiber yield. In order to obtain fair prices

there should generally be strong competition between well informed buyers and well informed sellers. However, if both sellers and buyers have good and very nearly equal knowledge of yield and of market prices according to quality they should be able to arrive at fair prices.

The knowledge of both sellers and buyers should be improved through the development of better systems for selling on the basis of description, or description and small representative samples. Selling on the basis of reliable description and small samples should lead to economies in showing, storing and shipping, and provide for better competition in centralized trading places. It is necessary to have reliable descriptions, made in accordance with uniform standards, or descriptions and small representative samples for this type of trading to be efficient and effective. Further work in the development of adequate standards and in the technology of sampling and testing is needed. Reliable commercial grease wool classification services in which growers, marketers and manufacturers have confidence should be further developed. Selling wool at well planned and organized auctions might prove to be worthwhile. More widespread use of futures markets on an intelligent basis should improve these media for minimizing time-price risks through hedging.

Processing and Manufacturing

Although substantial improvements have been made in recent years, manufacturers can give further assistance in promoting a sound and prosperous domestic wool industry by more effective use of domestic wools that are relatively best adapted, physically and economically, to the production of particular products; by improving the quality and developing a wider variety of suitable and attractive fabrics and finishes of good quality made of wool and combinations of wool and other fibers; and by increasing the efficiency and reducing the costs of manufacturing operations.

Better adjustments in the qualities of domestic wool used would need to be based on at least fairly complete information designed to show specifically the influences of the differences in the quality of wool on its value for use in the manufacture of specified products, on the costs of the wool to mills, on the costs of producing the wool, and on the prices to farm producers. If this information were available, it would supply a basis for approximating the best adjustments in quality of wool to mill requirements. Developments in technology, in wool production, and in other factors may result in considerable changes in quality of wool that are relatively best adapted to the production of specified products.

Improvements in the quality, suitability and attractiveness of wool products from the viewpoint of consumers' preferences, along with comprehensive and effective efforts to promote widespread consumer appreciation of these improved products may be especially important as a means of expanding market outlets for wool products. Special chemical treatments offer great possibilities for improving the quality characteristics of wool products so that they will be in a better position to meet the ever increasing competition of the man-made fibers. For example, it has been demonstrated that the treatment of wool with the chemical known as beta propiolactone greatly improves its felting characteristics. Other developments which would tend to increase the popularity of wool for clothing and household uses would include: (1) Providing whiter

wool products which will retain their whiteness during extended periods of use; (2) Decreasing the tendency of wool fabrics to shrink during cleaning; (3) Developing permanent resistance to attack by clothes moths and carpet beetles; (4) Preventing degradation of the wool fiber during processing and subsequent use; (5) Improving the surface characteristics of the wool fiber to decrease retention and facilitate removal of soil, and to reduce scratchiness during wear.

Improvements also can be made in the mechanical processing of wool into yarns and fabrics. This would include the development of processes for blending wool with other fibers. At the present time, virgin wool fabrics account for less than 3 percent by yardage of the total fabrics used in this country. The creation of fabrics of superior quality by blending wool with other fibers would be especially helpful in improving the competitive position of wool in the textile markets. An aggressive program for fully utilizing the results of research and other technological developments is needed.

Feasible means of increasing the efficiency of manufacturing operations would be revealed by detailed cost data for representative operators in each important segment of the industry showing the influence of such factors as kinds of equipment and techniques used, size and organization of the business units, kinds of raw materials used, and other factors on the unit costs of labor and overhead at each important stage of processing under actual operating conditions. Detailed specifications, based on cost engineering data and other information, for low-cost establishments for manufacturing typical kinds of products would show the more desirable buildings, machinery and equipment, floor plans, labor requirements, operating programs, and production data. Detailed cost data for the various processes and operations also would be needed. Such information on the influences of the different factors on cost per unit under actual operating conditions and on detailed specifications and cost data for model low-cost operating units, would supply a basis for indicating the most feasible means by which and the extent to which improvements could be made.

Possibilities of making substantial improvements in wool manufacturing operations are indicated by the results of research of this type relating to the carded cotton yarn industry. This research was designed to show how manufacturers of carded cotton yarn could increase their efficiency and reduce their costs. Possible reductions in manufacturing costs indicated for individual establishments averaged more than one-fifth of the total. Reports indicate that results of similar studies in other segments of the textile industry would be likely to present even greater possibilities. Economic applications apparently are lagging far behind technological developments in the textile manufacturing industry, with the result that manufacturing costs are substantially higher than would be the case if economic benefits of technological developments were fully utilized.

Some of the more promising means of increasing efficiency and of reducing costs of manufacturing textiles, as indicated by the results of the study relating to carded cotton yarn, include increased use of new and modern automatic machinery, some rearrangements of machinery for better flow of work and more efficient operations, increased machine assignments and the equalization of reasonable work loads for machines and employees, and adjustments in the size of mills and in number of products manufactured.

Improvements in efficiency might be achieved also through a more vigorous research program to facilitate the recovery of, and to develop new and more profitable uses for unutilized or partially utilized by-products. Wool wax, for example, usually is not fully recovered or utilized. It causes expensive stream pollution problems. Demand might be increased through further development of chemical intermediates and plasticizers, lubricants and scourable branding paints from wool wax or lanolin. Mill fiber wastes might be better utilized from further treatments to produce paints, adhesives, fire foam and protein concentrates.

Fabrication of Apparel and Household Textiles

The large share (34 cents) of the consumer's dollar paid for wool apparel and household textiles that is accounted for by gross margins of fabricators emphasizes the importance of improvements in this industry. Although substantial progress has already been made, additional improvements may be attainable through suitable and attractive styling and good construction of apparel and household products made of wool or wool blends; the education of consumers regarding the quality, variety, and adaptability of these products; timely adjustments in the manufacture of these products to meet consumer requirements; and increased efficiency in the manufacturing operations so that a variety of suitable and attractive products made of domestic wool can be made readily available to consumers at attractive prices.

Modernization and operation of plants, including the installation of improved machinery and equipment, organization of the plant so as to utilize the machinery and equipment to best advantage, and development of improved working conditions so as to attract and hold competent workers may be an effective means of bringing about improvements in many plants. Modernization of plants and utilization of workers and equipment to their full potentialities, to the mutual benefit of workers and management, apparently offers good opportunities for reducing costs of fabricating apparel and household textiles.

Improvements in management represent an effective means of increasing efficiency. Training and maintenance of an adequate staff of "utility" operators who are skilled in a number of operations was suggested as one of the improvements needed. Through the use of such operators, a high rate of production can be maintained despite the high rate of turnover of employees and the specialized training needed.

Many fabricating establishments are apparently too small to make full use of the more efficient methods and equipment. In 1947, for example, about 24 percent of the establishments in the apparel and relating products industry had fewer than 5 employees, more than 40 percent had fewer than 10 employees, and 60 percent had fewer than 20 employees. The size of most such establishments would have to be increased before they could fully utilize improvements in technology and in methods. But large mechanized factories operated on a mass production basis are limited by the demands of fashion, particularly for women's ware, which requires wide ranges in, and frequent changes of styles.

Integrations in the manufacture of apparel and household textiles may offer possibilities for reducing costs. Manufacturers of men's ready-to-wear clothing are integrating to a considerable extent, but apparently opportunities for integration in the women's ready-to-wear industry are limited by the pyramiding of style risks and the variety demanded by retailers.

Available information is not adequate to indicate specifically all the means by which and the extent to which it would be feasible to increase the efficiency and to reduce the costs of fabricating apparel and household textiles. Detailed cost data and specifications for model low-cost establishments similar to those indicated for manufacturers, with appropriate modifications, would provide a basis for constructive action.

Wholesale and Retail Distribution

Improvements in wholesale and retail distribution of wool products may be an effective means of expanding market outlets, increasing returns to wool growers, and, in general, promoting a sound and prosperous domestic wool industry. The large share (37 cents) of the consumer's dollar paid for wool apparel and household textiles that is accounted for by gross margins for wholesale and retail distribution emphasizes the importance of improvements.

Means of reducing costs of distributors include methods of increasing general efficiency of existing agencies, concentration of services in the hands of agencies or combinations of agencies that can render them most efficiently, and reductions in "unnecessary" services. Detailed information with regard to the influence of each important factor on efficiency and costs would indicate the most effective means by which and the extent to which it would be feasible to bring about improvements. Analyses of the types suggested for manufacturers, with appropriate modifications, should supply the information needed for constructive action.

Expansions in volume of business per operator appear to offer possibilities for reducing operating expenses per dollar of sale for wholesalers of finished textile products. Census data for 1948 show that average expenses per dollar of sale for wholesalers with annual volume of sales of $200,000 to $500,000 exceeded those for wholesalers with annual volume of sales of $1,000,000 or more by 19 percent for those handling men's and boys' clothing and furnishings, and 9 percent for those handling women's and children's clothing and furnishings.

Integration of the distribution and manufacturing functions may be an effective means of reducing costs of wholesaling. In 1948, according to Census reports, operating expenses of wholesaling men's and boys' clothing and furnishings averaged 14.2 percent of net sales for merchant wholesalers and less than 9 percent for manufacturers' sales offices and branches. But information available does not indicate to what extent these differences are accounted for by differences in services rendered.

Efficiency of retailers, especially the smaller ones, may be increased through expansions in the activities of large organizations which provide purchasing and merchandising services to the smaller independent stores. These services, by helping smaller operators obtain better selections of merchandise, better control of stocks, and increased rate of turnover, may enable them to approximate the merchandising efficiency of the larger distribution outlets.

Retailer's margins may be reduced by simplifying the selling processes so as to permit and encourage some degree of self-selection and self-service by customers. This simplification may be facilitated by open display of merchandise, arranged on the basis of consumer's primary interests, and by convenient

arrangements for completing the transaction. Such simplification makes possible reductions in retail margins for some products mainly by reducing payroll costs, which average more than half of the total operating expenses of retailers. Accurate labeling to show the quality and size of the products on the basis of adequate standards would facilitate self-service methods. These and other economies in retailing may make possible substantial reductions in costs of distributing textile products, to the advantage of the entire wool industry and of consumers.

A PUBLIC RELATIONS PROGRAM

Maintenance of the domestic wool industry at current or higher levels and an expansion of foreign trade in wool can be accomplished simultaneously only if domestic consumption of wool is increased. Such an expansion in consumption could be achieved. It would be advantageous from the standpoint of producers and consumers alike if sufficient economies were made in the costs of production, marketing, processing and distribution, and if sufficient improvement were made in the characteristics of the end products of wool to permit their effective competition for the consumers' dollar.

While much work is being done to improve domestic wool and its products, obtain wider use of wool, educate consumers on its many fine qualities, etc., more needs to be done. The national and State wool growers' organizations, the National Wool Council, the Wool Bureau, and other organizations within the industry all have active programs for increasing the use of wool and improving the competitive status of the domestic product. The work of the Department's Extension Service and the State agricultural colleges in improving production and preparation of the domestic clip are all important contributions.

The initiative and leadership for programs to promote the production and improvement of domestic wool must be taken by the wool growers. While programs designed to improve the acceptability of domestic wool and increase demand for it are of value to all segments of the industry, manufacturers and distributors of woolen textiles are not wholly dependent upon the supply of domestic wool for their requirements. Their needs are being supplied to an increasing extent from foreign-produced wool and from other fibers. Consequently, they do not have the direct interest in improving the domestic industry as do the growers.

Growers must recognize that they are producing an industrial raw material which must compete on the basis of standards of quality and usability established by foreign grown wool; that as a fiber wool is in direct competition with other fibers for market outlets available to textile fibers; that in the free play of supply and demand in the open market domestic wool must meet the competition of foreign wool and other fibers in quality, usability, buyer appeal and price.

Additional research and educational activities are needed to develop and disseminate among growers information concerning possibilities of increasing the acceptability of domestic wool among manufacturers; and to the consuming public factual information regarding the quality and adaptability of wool and wool products for a variety of uses and the superior properties of wool for specific uses.

PRICE, TARIFF AND RELATED PROGRAM ALTERNATIVES

The future of the domestic sheep and wool industry depends to a large extent on the relative returns from sheep production compared with those from alternative enterprises. Net returns to producers depend on prices received and costs of production. The problems of production and marketing and suggestions on how to increase efficiency of operation and their effects on costs and prices are discussed in earlier parts of this report. In this remaining section the problems of price assistance on wool to domestic producers are considered. Continuation of some type of price assistance to domestic wool growers, whether through tariffs, loan and purchase programs, or some other type of program, is essential if domestic production of wool is to be maintained at current or higher levels. Otherwise, further substantial decreases in domestic production would be inevitable.

The price problem of the domestic wool industry is complicated by a number of factors such as the influence of world prices, tariffs, government price support programs, and fluctuating conditions of domestic demand and supply. It is a two-fold problem: (1) The immediate or short-run problem of relatively low wool prices and large acquisitions under price support operations; and (2) the longer-run problems of maintaining a fair return to the producers, keeping the price of wool competitive with other fibers, and at the same time, minimizing interference with foreign trade in wool and other commodities.

As an immediate problem the Department of Agriculture is required to support prices of wool with methods authorized by law as discussed earlier. Continuation of current legislation would require, for all practical purposes, that this support remain at 90 percent of parity during the foreseeable future in view of the fact that domestic production likely will remain well below the legislative objective of 360 million pounds of shorn wool.

Duty paid prices for some types of imported wools have fallen below the support level for comparable domestic wools which comprise important segments of the domestic wool clip. As a result the government already has acquired over 100 million pounds of wool through its price support operations and it is likely to acquire more. Wool imports, and the proportion of domestic mill consumption represented by imported wools have been larger than they otherwise would have been.

Section 22 of the Agricultural Adjustment Act, as amended, requires that whenever there is reason to believe that imports are coming in under such conditions and in such quantities as to materially interfere with a price support program or decrease substantially the amount of products processed in the United States, from domestic wool, action must be initiated under the provisions of the law to control the imports and alleviate such interference.

In accordance with the requirements of the law, and as a short-time expedient the Secretary has recommended to the President that action be taken under Section 22 of the Agricultural Adjustment Act, as amended, to prevent imports of apparel wool and wool tops from rendering ineffective or materially interfering with the wool price support program, and from reducing further the amount of wool products processed in the United States from domestic wool. The form of remedial action recommended under Section 22 is the application of import feed, in addition to prevailing tariffs, on all apparel wool and wool tops imported for consumption.

While such action appears to be mandatory with current legislation and price relationships, it is recognized, that over an extended period, it probably would have adverse effects upon international trade and upon the competitive position of wool in relation to other fibers. Such action, thus, may not be desirable on a continuing basis over a period of years. However, in view of the legislation, the Secretary has little alternative but to recommend such action.

The objective of a desirable long term program to solve the price problems of wool is one which in the words of the President's letter "...will promote the development of a sound and prosperous domestic wool industry and at the same time permit an expanding foreign trade."

Such a program should: (1) Encourage efficient production and marketing practices but with a minimum of government supervision of individual producers and minimum interference with the textile industry; (2) require a minimum of cost to consumers and the Government compatible with the achievement of the main objectives; (3) include a pricing policy that would assure growers adequate returns and at the same time enable wool to meet the current and potential competition of foreign wool and of other fibers; (4) provide sufficient flexibility to meet changing conditions and adequate continuity to permit the planning of production and marketing programs with confidence and to assure domestic growers dependable returns and exporting countries a dependable market; and (5) it must fit into overall farm policy as well as U. S. international trade policy.

The Secretary is currently engaged in a careful study of the entire farm program with a view to determining the type of program or programs which would best contribute to the welfare of the country and of the agricultural economy. Attention is being given to various methods of achieving the objectives of the agricultural program. In the case of wool, as for other commodities, a number of alternatives have been suggested to the Department. Some of the alternatives and some of their major effects, assuming the same level of returns to the grower for domestic wool, are discussed below.

Increasing the Tariff

It has been suggested that price assistance for domestic wool growers be provided solely by the tariff on wool and wool manufactures and that required additional assistance be obtained by increasing the present duties. These proposals seek to raise the domestic wool price level by increasing the cost of foreign wools. Advocates of this proposal point out that the tariff on wool has been reduced from 34 to 25½ cents, and, in addition, that the increase in the general level of prices has decreased materially the protection afforded by the tariff. Some suggest an increase in the tariff of a fixed amount per pound whereas others relate the increase to the parity price of wool. The principal effects of using the tariff as a means of augmenting returns to domestic wool growers are:

1. If the fee were merely a fixed fee, it would be very simple to administer. All that would be involved would be a change in the rates of duty as presently collected. However, it would be difficult to achieve a specified price or income objective for producers since the domestic price would move up and down with changes in world prices.

2. The tariff would provide additional revenue to the government on the wool that is imported.

3. The price of wool would be raised in comparison with prices of synthetics and other fibers, thereby weakening the competitive position of wool. If continued over a period of time it could impair permanently the domestic demand for wool.

4. The cost of wool products to consumers likely would be increased more than the amount of the increase in the tariff because of the pyramiding of many of the costs in marketing, processing and distribution with an increase in the cost of raw materials. Thus, the cost to consumers would be greater than the combined benefits to wool growers and revenues to the Government resulting from the increase in duties.

5. A significant increase in the tariff would retard foreign trade and it might encourage retaliation by wool exporting countries.

6. There are certain problems encountered in making the tariff effective. For example, some wool exporting countries are using multiple rates of currency exchange to subsidize exports to the United States. Countervailing duties are presently being levied to offset the benefit of bounties being received by exporters of wool tops from Uruguay.

Some suggestions provide for a "flexible tariff" to raise the duty paid price of wool to parity. Under this appraoch import fees would be levied on a lot by lot basis when customs appraisals of the wool were made. The fees on imports would be so levied that foreign wools would cost, landed in the United States, the equivalent of 100 percent of the parity for comparable qualities of domestic wools, with appropriate allowances for differences in marketing and conversion costs. This operation would require a schedule of parity equivalents for all grades and classes of wool at each point of entry inasmuch as parity is computed as the average for all domestic wool on a local market basis.

Flexible fees applied lot by lot would have the same general effects as a fixed fee. However, they would be much more complex in administration since they would pose the very great practical problem of determining and assessing duties on an individual lot basis. There would also be the problem of maintaining equitable compensatory duties on wool products. Variations in prices and frequent adjustments in the fees required would interfere with the volume of trading and the movement of wool in and out of bond. It would tend to encourage the movement of imported wool into bond during periods of high duties and out of bond during periods of lower duties.

Import Quotas

It has been suggested that quota limitations on imports of wool be used to increase wool prices in the United States by limiting supplies. Also suggested have been various combinations of quotas and tariffs or import fees, such as the imposition of increased duties once specific quotas were filled. Restrictions on imports to hold domestic wool prices above world levels would include the following major effects:

1. They would pose serious administrative problems in permitting imports of the particular kinds and types desired by domestic mills. A wide and changing variety of classes and grades of wool from many countries are imported to fill the diverse requirements of manufacturers. It would be most difficult if not impractical, to determine in advance the quantities of specific types to be covered under the quotas.

2. Import quotas would encourage retaliatory action by other nations.

3. By restricting supplies of foreign wools and raising prices, import quotas would encourage the use of competing fibers. Continued restrictions on imports could seriously and permanently curtail the domestic demand for wool.

4. The price benefits to domestic growers would be less than the additional costs to domestic consumers of wool products because of the pyramiding of processing and distribution costs.

5. Import quotas per se would not provide revenue to the government.

Government Loans or Purchases (Assuming Current Tariff)

Loans on shorn wool and purchases of pulled wool by CCC are presently being used in addition to tariffs to support prices of domestic wool. Some of the principal effects of loan and purchase programs as currently operated as a method of increasing returns to wool growers are:

1. The wool grower has an assured outlet for his wool at the support level irrespective of the course of domestic or world market prices. He has the opportunity of obtaining more than the support level in the event of a rise in prices prior to maturity of the loan.

2. Administration of the program involves additional expense and processes in marketing. Each lot of wool must be appraised. Extra accounting and other features are required, all of which add to the costs.

3. When the support price is higher than the open market price, domestic wools move into Government hands and imported wools take their place in supplying current wool consumption requirements. When this occurs, under existing legislation (Section 22 of the Agricultural Adjustment Act, as amended) it becomes necessary to take action to control imports--through imposition of fees or quotas the effects of which have been indicated in the preceding sections.

4. Over the long run programs of this type tend to stabilize prices around the support level rather than to significantly increase prices to producer The wool acquired by CCC must eventually be disposed of chiefly in the United States. If it is placed immediately on the open market, prices may be held down or depressed to a point where current marketings by wool growers will continue to move to CCC, thereby creating new holdings. Likewise, if acquired wool is held until prices reach a certain level, the stocks impose a ceiling over the open market. This hampers growers in selling their current clip until this backlog is finally absorbed. Until the rise in prices is of sufficient duration and magnitude to absorb the backlog, the loan and purchase programs tend to hold returns to domestic wool growers at the support level.

5. Losses incurred in acquiring and disposing of wool over the long run can be substantial.

A loan and purchase program also could be administered in a manner which would approach direct payments to growers. The Government could stand ready to acquire wool at a specified price level and immediately thereafter place it on the open market irrespective of the market price. In periods of relatively low prices, however, essentially all domestic wool would go through the hands of the Government and the costs incurred by the Government would be substantial.

Payments to Growers (Assuming Current Tariff)

Another method of increasing returns to domestic wool growers would be to allow wool prices to seek their own level in the market under current tariff protection and, in lieu of current price support operations, to make payments to growers when necessary to supplement the returns they receive from the sale of their wool. When, under conditions and periods to be specified, prices received by domestic wool growers were below the support level, the individual wool grower's returns from wool would consist of two parts; (a) the amount he received from the sale of his wool on the open market, and (b) the payment by the Government. A number of ways have been suggested to determine the amount of the payments and the manner in which the payments would be made. Compared with programs supporting the market price of wool, the use of wool payments to growers would have the following major effects:

1. It would provide price assistance to producers at specified levels, and at the same time enable the domestic clip to move into consumption and to compete more freely on a price basis with other natural and synthetic fibers than it does with current price support operations.

2. It would offer an opportunity to encourage increased domestic production of wool without altering the competitive position of wool relative to other fibers.

3. The determination and making of the payments to wool growers when necessary could be fairly simple and inexpensive in operation, depending upon the basis of making payments. Nevertheless, there might be problems involved in establishing a method that would be considered satisfactory by all growers since any simple and inexpensive method of making direct payments would necessitate the abandonment of a specific price floor for the individual producer.

4. Payments could be used as an incentive for growers to increase the quality of their wool, to produce the types most in demand, and to obtain the best possible market price for it.

5. Under certain conditions, such as greatly depressed world wool prices, the cost might temporarily become so large as to generate public pressures to control imports. But in general, periodic action such as that currently recommended under Section 22 would not be required to protect the domestic price support program.

6. Possible losses to the government in the acquisition, storage and disposition of wool stocks in loan and purchase operations would be avoided.

7. Payments to growers would require revenues obtained through taxes or tariffs. Hence they might be subject to criticism and subsequent pressure for their discontinuance on the grounds that they were a direct subsidy to the wool industry.

Alternative Methods of Financing Wool Payments

One way of financing wool payments would be by direct appropriations from the Treasury. Alternative methods of providing funds for the Treasury to offset payments made to wool growers include use of tariff revenues collected on imports of wool and wool products, and use of a processing tax levied on the manufacture of woolen products. Payments financed by direct appropriations likely would be most vulnerable to criticism and to pressures for their discontinuance on the grounds that they were a direct subsidy to the wool industry even though they would permit lower prices of woolen products to consumers and lower administrative costs. Payments financed by a processing tax or tariff revenues probably would be subject to less criticism as a direct subsidy in that the payments required to maintain growers' incomes would be smaller (if tariffs or their equivalent in a processing tax were larger) and the necessary funds would be collected from those using wool and wool products. These alternative methods of financing payments to growers are discussed below.

Processing Tax (Without Tariff).- Under this proposal a uniform tax would be imposed on the processing of domestic and imported wools and a related tax would be imposed on imports of wool tops and wool manufactures to provide the funds for payments to wool growers. Some suggestions of this type provide for the suspension of the tariff but it could be used either with or without the tariff. Without the tariff, this method of financing would have among others the following major effects:

1. Since a processing tax substantially lower than the current level of tariffs would provide adequate funds to maintain growers' returns at current or higher levels, prices of wool to mills and to consumers would be lower than under current tariffs, and wool could meet more effectively the competition of other fibers. At the same time the rate of payment to producers would be greater and prices received in the open market would be lower than with current tariff levels.

2. The lower rate of processing tax compared with current tariff levels would result in ultimate benefits to consumers in excess of the costs involved because of the pyramiding of costs in prices to consumers. However, the reduction in the cost of wool to mills through use of a relatively low processing tax instead of the tariff at current levels would be largely at the expense of reduced revenue to the Government.

3. The historic relationships between domestic and world prices of wool would be modified. Foreign producers would receive somewhat higher prices in the United States (than under the current tariff) and the domestic market would become more attractive to foreign wool. This would be partly offset by the fact that domestic wool would be available at lower prices. The lowering of the domestic market price level might even result in limited exports of some types of wool.

4. Additional administrative personnel and facilities would be required to collect the processing tax.

Tariff Duties.- Under this proposal the tariff on imports of wool and wool products would be continued at current, or lower, levels and the payments to wool growers would be financed from the duties collected on wool and wool products. If tariffs were continued at current levels, this plan would have the following major effects:

1. The cost of wool to mills and to consumers would be higher and the competitive position of wool somewhat poorer than they would be with a lower tariff or processing tax. Conversely, the wool payments would be less, and they would be needed less frequently than would be the case without the tariff.

2. The historic relationship between domestic and world prices of wool and wool products would be maintained. The competitive position between domestic and imported wools and between domestic wools and other fibers would not be affected.

3. No increase in administrative costs and facilities would be required to collect the funds for payments to growers.

4. Operation of the plan would be more satisfactory to the wool industry in that the tariff rates established to protect the domestic industry would be continued and the revenues used to maintain the economic position of the industry. It might be considered as establishing a policy or precedent of earmarking the tariff on a commodity to provide price assistance for that specific commodity. But if it were limited to commodities such as wool which are largely imported, such a plan would in effect provide additional tariff protection to the domestic industry without the adverse effects on international trade which would accompany an increase in the tariff.

5. At current levels tariffs would provide the Treasury with revenues substantially in excess of the payments required to maintain growers' returns.

Since the revenue from the wool tariff exceeds the payments required to maintain growers' returns it would be possible to reduce the tariff and still maintain growers' returns if the tariff revenues were used for financing payments to growers. In fact, growers' returns per pound of wool could be maintained at any specified level by a tariff reduced to the same rate as that of a processing tax required to maintain the same level of returns. For example, the market price of wool, plus payments made possible by a 15 cent tariff, would be the same as the market price plus payments made possible by a 15 cent processing tax without any tariff. Thus, the tariff at lower than current levels and a processing tax at the same level as the lowered tariff could be equally effective in maintaining total growers' returns.

A low tariff would have the same effects on prices of wool to mills and to consumers, and on the competitive position of wool, as would an equally low processing tax as previously listed. They would yield the same net revenue to the Government after payments required to raise or maintain returns to growers at specified levels. However, like a relatively low processing tax and no tariff, a reduced tariff would of course result in growers receiving a larger proportion of their returns in the form of payments, and revenues per pound of imported wool would be reduced.

Appendix table 1.- Number of stock sheep and lambs on farms and ranches in the 13 range sheep States 1/ and the native sheep States, and number of sheep and lambs on feed, United States, selected peak and low years 1867 to 1939 and annually 1940 to 1953

Year	Number of stock sheep and lambs: 13 range States	Native States	United States	Sheep and lambs on feed U.S.	All sheep and lambs U.S.
	Thousands	Thousands	Thousands	Thousands	Thousands
1867	7,411	37,586	44,997	-	-
1871	9,565	24,498	34,063	-	-
1884	24,526	26,575	51,101	-	-
1897	23,488	15,403	38,891	-	-
1909	31,131	15,967	47,098	3,695	50,793
1923	22,810	9,787	32,597	4,206	36,803
1934	34,060	14,184	48,244	5,259	53,503
1937	31,640	13,611	45,251	5,597	50,848
1939	31,811	13,625	45,463	5,885	51,348
1940	32,162	14,104	46,266	5,841	52,107
1941	33,016	14,425	47,441	6,479	53,920
1942	34,444	14,902	49,346	6,867	56,213
1943	33,537	14,659	48,196	6,954	55,150
1944	31,177	13,093	44,270	6,512	50,782
1945	28,241	11,368	39,609	6,911	46,520
1946	25,536	9,989	35,525	6,837	42,362
1947	22,656	9,149	31,805	5,693	37,498
1948	21,091	8,395	29,486	4,851	34,337
1949	19,335	7,605	26,940	4,003	30,943
1950	18,753	7,429	26,182	3,644	29,826
1951	19,414	7,839	27,253	3,382	30,635
1952	19,524	8,526	28,050	4,038	32,088
1953	19,030	8,827	27,857	3,754	31,611

1/ The 13 range sheep States include Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Texas and South Dakota. The native States are all other States, where sheep generally are raised under farm conditions.

Appendix table 2.- Number of sheep shorn in the 13 range sheep States and in the native sheep States, by size of flocks, 1949

Number of sheep shorn per farm	Number of sheep shorn		
	13 range sheep States	Native sheep States	United States
	1949	1949	1949
	Number	Number	Number
Less than 100	1,111,157	4,755,117	5,866,274
100 - 299	1,454,009	1,004,829	2,458,838
300 - 599	1,395,364	307,539	1,702,903
600 - 999	1,376,357	124,692	1,501,049
1,000 - 2,499	4,080,320	158,994	4,239,314
2,500 or more	6,516,307	158,018	6,674,325
All farms	15,933,514	6,509,189	22,442,703

Bureau of the Census.

Appendix table 3.- Average weight of fleece per sheep shorn in the 11 Western States, Texas, South Dakota, native States and United States, 1909 to 1952

Year	11 Western States	Texas	South Dakota	Native States	United States
	Pounds	Pounds	Pounds	Pounds	Pounds
1909	7.3	5.9	6.5	6.4	6.9
1910	7.2	6.0	6.8	6.4	6.8
1911	7.3	6.1	6.8	6.5	6.9
1912	7.2	6.1	6.9	6.5	6.9
1913	7.2	6.3	7.3	6.4	6.9
1914	7.1	6.4	7.4	6.4	6.9
1915	7.2	6.4	7.0	6.5	6.9
1916	7.3	7.0	7.5	6.6	7.1
1917	7.4	7.0	7.3	6.8	7.2
1918	7.5	6.8	7.4	6.8	7.3
1919	7.6	7.1	7.4	6.8	7.3
1920	7.6	7.0	7.0	6.7	7.2
1921	7.7	7.3	7.3	6.6	7.3
1922	7.6	7.1	7.6	6.7	7.3
1923	7.8	7.2	7.7	6.8	7.4
1924	7.9	7.4	7.7	6.8	7.5
1925	8.0	7.2	7.8	6.9	7.5
1926	8.2	7.3	8.2	6.9	7.7
1927	8.1	7.7	8.4	7.0	7.7
1928	8.3	8.1	8.4	7.0	7.9
1929	8.1	8.2	8.2	7.0	7.8
1930	8.4	7.7	8.3	7.0	7.9
1931	8.6	7.8	8.4	7.2	8.0
1932	8.1	8.1	8.0	7.0	7.8
1933	8.4	9.5	8.0	7.0	8.1
1934	8.4	8.0	8.0	7.2	8.0
1935	8.5	8.2	8.2	7.3	8.0
1936	8.3	8.2	8.4	7.0	7.9
1937	8.5	8.2	7.9	7.3	8.0
1938	8.6	8.1	8.2	7.0	8.0
1939	8.5	7.9	8.7	7.2	8.0
1940	8.6	7.8	8.5	7.2	8.0
1941	8.8	7.7	8.7	7.4	8.1
1942	8.6	7.2	8.5	7.3	7.9
1943	8.5	7.6	8.2	7.3	7.9
1944	8.4	7.6	7.9	7.2	7.8
1945	8.5	7.8	7.8	7.3	7.9
1946	8.8	7.8	8.2	7.3	8.1
1947	8.8	7.7	8.3	7.4	8.1
1948	8.8	7.7	8.1	7.3	8.1
1949	8.6	7.9	8.3	7.3	8.1
1950	8.9	7.7	8.6	7.4	8.2
1951	9.2	7.3	9.3	7.8	8.2
1952	9.0	7.7	8.8	7.5	8.2

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Appendix table 4.- Percentage of wool growers' gross income derived from shorn wool, and shorn and pulled wool, United States, by years, 1910 to 1952

Year	Pulled wool production: As pulled (1)	Pulled wool production: Grease equivalent 1/ (2)	U.S. average farm price shorn wool 2/ (3)	Farm value pulled wool 3/ (4)	Sheep, lambs, mutton, and lamb: Value or production 4/ (5)	Sheep, lambs, mutton, and lamb: Less pulled wool 5/ (6)	Farm value shorn wool (7)	Farm value of all wool (shorn and pulled) 6/ (8)	Total grower income 7/ (9)	Percentage of wool growers' income derived from - Shorn wool 8/ (10)	Percentage of wool growers' income derived from - All wool 9/ (11)
	1,000 pounds	1,000 pounds	Cents per pound	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	Percent	Percent
1910	40,000	64,000	21.7	13,888	68,353	54,465	66,404	80,292	134,757	49.3	59.6
1911	41,000	65,600	15 8	10,365	54,694	44,329	47,759	58,124	102,453	46.6	56.7
1912	41,500	66,400	17.3	11,487	67,273	55,786	47,950	59,437	115,223	41.6	51.6
1913	43,500	69,600	16.7	11,623	65,985	54,362	44,418	56,041	110,403	40.2	50.8
1914	43,000	68,800	16.6	11,421	75,312	63,891	41,559	52,980	116,871	35.6	45.3
1915	40,000	64,000	22.1	14,144	81,528	67,384	53,223	67,367	134,751	39.5	50.0
1916	43,600	69,760	26.1	18,207	87,068	68,861	63,780	81,987	150,848	42.3	54.4
1917	40,000	64,000	41.6	26,624	135,124	108,500	98,453	125,077	233,577	42.2	53.5
1918	42,000	67,200	57.7	38,774	161,684	122,910	146,532	185,306	308,216	47.5	60.1
1919	48,300	77,280	49.5	38,254	134,951	96,697	133,571	171,825	268,522	49.7	64.0
1920	42,900	68,640	45.5	31,231	98,354	67,123	114,117	145,348	212,471	53.7	68.4
1921	48,500	77,600	17.3	13,425	72,223	58,798	41,882	55,307	114,105	36.7	48.5
1922	42,000	67,200	27.1	18,211	97,402	79,191	61,998	80,209	159,400	38.9	50.3
1923	42,500	68,000	39.4	26,792	117,985	91,193	90,607	117,399	208,592	43.4	56.3
1924	43,800	70,080	36.6	25,649	141,327	115,678	87,284	112,933	228,611	38.2	49.4
1925	46,800	74,880	39.5	29,578	166,262	136,684	99,990	129,568	266,252	37.6	48.7
1926	49,600	79,360	34.0	26,982	167,385	140,403	91,514	118,496	258,899	35.3	45.8
1927	50,100	80,160	30.3	24,288	167,528	143,240	87,610	111,898	255,138	34.3	43.9
1928	51,900	83,040	36.2	30,060	193,183	163,123	113,879	143,939	307,062	37.1	46.9
1929	54,500	87,200	30.2	26,334	191,972	165,638	99,056	125,390	291,028	34.0	43.1
1930	61,900	99,040	19.5	19,313	134,141	114,828	68,739	88,052	202,880	33.9	43.4
1931	66,100	105,760	13.6	14,383	102,094	87,711	51,039	65,422	153,133	33.3	42.7
1932	67,100	107,360	8.6	9,233	74,666	65,433	30,202	39,435	104,868	28.8	37.6
1933	64,200	102,720	20.6	21,160	86,379	65,219	77,065	98,225	163,444	47.2	60.1
1934	60,500	96,800	21.9	21,199	99,324	78,125	80,709	101,908	180,033	44.8	56.6
1935	66,000	105,600	19.3	20,381	115,850	95,469	69,613	89,994	185,463	37.5	48.5
1936	66,200	105,920	26.9	28,492	133,034	104,542	94,915	123,407	227,949	41.6	54.1
1937	66,200	105,920	32.0	33,894	150,197	116,303	113,807	147,701	264,004	43.1	55.9
1938	64,500	103,200	19.1	19,711	127,161	107,450	68,917	88,628	196,078	35.1	45.2
1939	64,500	103,200	22.3	23,014	138,414	115,400	80,683	103,697	219,097	36.8	47.3
1940	62,000	99,200	28.4	28,173	149,343	121,170	105,539	133,712	254,882	41.4	52.5
1941	65,800	105,280	35.5	37,374	192,102	154,728	137,754	175,128	329,856	41.8	53.1
1942	66,700	106,720	40.1	42,795	235,146	192,351	155,728	198,523	390,874	39.8	50.8
1943	65,200	104,320	41.6	43,397	242,294	198,897	157,587	200,984	399,881	39.4	50.3
1944	73,500	117,600	42.3	49,745	215,070	165,325	143,224	192,969	358,294	40.0	53.9
1945	70,500	112,800	41.9	47,263	227,295	180,032	128,970	176,233	356,265	36.2	49.5
1946	61,300	98,080	42.3	41,488	247,693	206,205	118,805	160,293	366,498	32.4	43.7
1947	56,600	90,560	42.0	38,035	286,120	248,085	105,654	143,689	391,774	27.0	36.7
1948	46,600	74,560	49.2	36,684	283,940	247,256	114,055	150,739	397,995	28.7	37.9
1949	35,600	56,960	49.4	28,138	258,616	230,478	105,223	133,361	363,839	28.9	36.7
1950	32,400	51,840	62.1	32,193	297,318	265,125	133,729	165,922	431,047	31.0	38.5
1951	25,900	41,440	97.0	40,197	366,310	326,113	218,832	259,029	585,142	37.4	44.3
1952	33,600	53,760	53.3	28,654	290,360	261,706	123,873	152,527	414,233	29.9	36.8

1/ Converted on basis of 1 pound pulled wool equal to 1.6 pounds grease wool.
2/ Average price received by producers for shorn wool.
3/ Column 2 multiplied by column 3.
4/ Value of sheep, lambs, mutton, and lamb sold or slaughtered for home consumption; adjusted for in-shipments, and changes in inventories.
5/ Column 5 minus column 4.
6/ Column 4 plus column 7.
7/ Column 6 plus column 8.
8/ Column 7 divided by column 9.
9/ Column 8 divided by column 9.

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Appendix table 5.- Average prices received by farmers per pound of shorn wool and per hundredweight of sheep, lambs, and beef cattle, United States, 1909 to 1952

Year	Wool per pound	Sheep per cwt.	Lambs per cwt.	Beef cattle per cwt.
	Cents	Dollars	Dollars	Dollars
1910	21.7	4.99	6.16	4.86
1911	15.8	4.01	5.17	4.57
1912	17.3	4.25	5.62	5.43
1913	16.7	4.52	5.99	6.20
1914	16.6	4.83	6.36	6.52
1915	22.1	5.30	6.98	6.26
1916	26.1	6.28	8.34	6.76
1917	41.6	9.58	12.71	8.54
1918	57.7	10.75	13.96	9.88
1919	49.5	9.26	12.83	9.97
1920	45.5	8.17	11.64	8.71
1921	17.3	4.55	7.13	5.63
1922	27.1	5.96	9.90	5.73
1923	39.4	6.55	10.52	5.84
1924	36.6	6.57	10.80	5.84
1925	39.5	7.56	12.40	6.53
1926	34.0	7.20	11.70	6.75
1927	30.3	7.01	11.50	7.62
1928	36.2	7.65	12.20	9.52
1929	30.2	7.19	11.90	9.47
1930	19.5	4.74	7.76	7.71
1931	13.6	3.11	5.64	5.53
1932	8.6	2.24	4.47	4.25
1933	20.6	2.38	5.04	3.75
1934	21.9	2.85	5.90	4.13
1935	19.3	3.75	7.28	6.04
1936	26.9	3.77	8.05	5.82
1937	32.0	4.52	8.88	7.00
1938	19.1	3.58	7.05	6.54
1939	22.3	3.90	7.78	7.14
1940	28.4	3.95	8.10	7.56
1941	35.5	5.06	9.58	8.82
1942	40.1	5.80	11.70	10.70
1943	41.6	6.57	13.00	11.90
1944	42.3	6.01	12.50	10.80
1945	41.9	6.38	13.10	12.10
1946	42.3	7.48	15.60	14.50
1947	42.0	8.39	20.50	18.40
1948	49.2	9.69	22.80	22.20
1949	49.4	9.27	22.40	19.80
1950	62.1	11.60	25.10	23.30
1951	97.0	16.00	31.00	28.70
1952 1/	53.3	10.10	24.30	24.30

1/ Preliminary.

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Appendix table 6.- Net ranch income investment, and returns on investment on family-operated sheep and cattle ranches with specified numbers of livestock in the Intermountain Region and Northern Plains, 1930 to 1952

Year	Sheep ranches						Cattle ranches					
	Intermountain Region 1/			Northern Plains 2/			Intermountain Region 3/			Northern Plains 4/		
	Net ranch income	Ranch investment	Returns on investment	Net ranch income	Ranch investment	Returns on investment	Net ranch income	Ranch investment	Returns on investment	Net ranch income	Ranch investment	Returns on investment
	Dollars	Dollars	Percent	Dollars	Dollars	Percent	Dollars	Dollars	Percent	Dollars	Dollars	Percent
1930	2,154	36,900	5.8	3,045	38,760	7.8	2,890	33,101	8.7	1,899	27,232	7.0
1931	417	27,831	1.5	980	30,695	3.2	1,506	27,592	5.5	261	22,481	1.2
1932	-704	20,607	-3.4	882	20,062	4.4	1,228	24,246	5.1	370	17,157	2.2
1933	1,334	17,220	7.7	2,553	21,850	11.7	976	19,445	5.0	726	15,700	4.6
1934	1,649	19,896	8.3	1,173	24,942	4.7	20	19,789	.1	-706	16,291	-4.3
1935	1,875	18,771	10.0	1,377	19,934	6.9	1,657	22,900	7.2	-331	15,705	-2.1
1936	4,118	23,075	17.8	2,778	25,372	10.9	1,963	24,344	8.1	-775	18,433	-4.2
1937	4,024	24,943	16.1	1,802	22,773	7.9	2,369	26,177	9.0	-776	18,283	-4.2
1938	2,891	25,372	11.4	1,565	25,631	6.1	2,302	26,634	8.6	617	20,575	3.0
1939	3,213	24,945	12.9	3,045	25,768	11.8	2,140	27,782	7.7	991	20,805	4.8
1940	4,107	27,451	15.0	3,013	26,130	11.5	2,775	30,073	9.2	1,456	21,666	6.7
1941	6,277	29,214	21.5	5,209	28,113	18.5	4,627	34,590	13.4	2,606	22,339	11.7
1942	6,291	34,304	18.3	7,406	34,666	21.4	5,237	40,125	13.1	4,943	26,079	19.0
1943	5,898	39,488	14.9	6,898	40,192	17.2	5,417	44,884	12.1	4,254	31,739	13.4
1944	4,152	42,396	9.8	5,774	38,124	15.1	4,911	45,800	10.7	4,097	32,636	12.6
1945	5,044	46,161	10.9	6,520	40,959	15.9	5,883	49,955	11.8	4,351	36,670	11.9
1946	5,779	51,480	11.2	7,406	47,632	15.5	6,721	54,833	12.3	5,220	40,979	12.7
1947	8,721	63,194	13.8	8,267	56,867	14.5	9,047	66,606	13.6	8,349	54,707	15.3
1948	8,598	79,230	10.9	9,096	69,044	13.2	10,761	70,602	15.2	7,841	60,149	13.0
1949	5,742	77,276	7.4	3,361	74,313	4.5	7,670	65,238	11.8	3,211	64,051	5.0
1950	11,123	82,134	13.5	9,760	68,461	14.2	8,872	70,643	12.6	5,031	59,538	8.4
1951	20,793	104,891	19.8	19,337	88,758	21.8	14,043	76,015	18.5	9,791	72,234	13.6
1952	5,664	117,145	4.8	5,970	110,403	5.4	10,796	91,191	11.8	5,942	86,615	6.9

1/ Ranches with 500 to 3,100 head of all sheep--usually about 1,400 head of stock sheep.

2/ Ranches with 300 to 3,100 head of all sheep--usually about 1,000 head of stock sheep.

3/ Ranches with 50 to 600 head of all cattle--usually about 100 head of breeding cows.

4/ Ranches with 40 to 600 head of all cattle--usually about 80 head of breeding cows.

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Appendix table 7.- Total and hired labor required and cost of hired labor on family-operated sheep and cattle ranches with specified numbers of livestock in the Intermountain Region and Northern Plains, 1930 to 1952

Year	Sheep ranches						Cattle ranches					
	Intermountain Region 1/			Northern Plains 2/			Intermountain Region 3/			Northern Plains 4/		
	Labor required		Cost of hired labor	Labor required		Cost of hired labor	Labor required		Cost of hired labor	Labor required		Cost of hired labor
	Total	Hired		Total	Hired		Total	Hired		Total	Hired	
	Days	Days	Dollars	Days	Days	Dollars	Days	Days	Dollars	Days	Days	Dollars
1930	1,034	500	1,525	854	401.5	916	531	0	--	515	104.4	219
1931	1,032	504	1,382	852	393.0	800	567	39	72	427	29.4	55
1932	1,014	492	872	770	305.4	475	573	51	59	492	91.3	125
1933	1,004	485	674	920	455.2	587	577	58	52	523	124.1	138
1934	998	485	771	878	416.3	507	579	66	67	400	26.5	26
1935	955	448	787	647	191.6	343	523	16	18	408	33.0	47
1936	964	460	880	705	253.4	449	512	8	10	364	16.2	23
1937	972	471	998	625	201.9	344	488	0	--	381	21.9	28
1938	974	476	934	638	224.5	449	476	0	--	406	38.5	62
1939	975	480	1,014	669	266.9	530	497	2	3	410	46.0	75
1940	959	467	1,011	653	257.1	530	476	0	--	415	52.8	88
1941	962	488	1,276	699	308.7	599	501	27	45	450	89.1	140
1942	945	489	1,739	741	350.6	924	509	53	122	466	100.5	221
1943	941	500	2,403	812	416.5	1,459	519	78	240	471	102.8	317
1944	940	517	2,950	751	354.7	1,533	512	89	332	485	107.9	416
1945	944	539	3,391	721	316.2	1,786	505	100	412	458	87.0	452
1946	951	546	3,775	737	311.4	1,678	485	80	363	441	79.4	382
1947	983	581	4,395	710	273.7	1,564	471	69	345	444	83.1	409
1948	1,007	602	4,755	760	325.5	2,024	465	60	375	427	76.6	421
1949	1,007	596	4,650	765	320.7	2,113	500	92	563	428	75.1	438
1950	986	578	4,524	755	317.3	2,062	459	51	352	429	76.3	439
1951	1,009	601	5,702	761	329.0	2,575	469	67	513	436	84.1	595
1952	1,036	628	5,491	819	368.8	3,013	462	60	489	437	91.5	666

1/ Ranches with 500 to 3,100 head of all sheep--usually about 1,400 head of stock sheep.

2/ Ranches with 300 to 3,100 head of all sheep--usually about 1,000 head of stock sheep.

3/ Ranches with 50 to 600 head of all cattle--usually about 100 head of breeding cows.

4/ Ranches with 40 to 600 head of all cattle--usually about 80 head of breeding cows.

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Appendix table 8.- Production per unit of input on selected types of commercial family-operated farms and ranches, 1930-33, 1939-42, and 1949-52 1/

Type and location of farms	Production per unit of input		
	1930-33	1939-42	1949-52
	(Index numbers - 1930-33=100)		
Sheep ranches			
Intermountain region	100	107	96
Northern Plains	100	107	100
Cattle ranches			
Intermountain region	100	100	93
Northern Plains	100	97	90
Corn Belt farms			
Hog-beef raising	100	118	137
Cash grain	100	134	142
Dairy farms			
Western Wisconsin	100	104	107
Eastern Wisconsin	100	112	115
Wheat farms			
Eastern Dakotas	100	70	133
N. Central N. Dakota	100	159	166

1/ This is a measure of changes in efficiency in production showing the change since the pre-drought period of 1930-33 in production obtained per unit of all factors used in production. It was derived by dividing the value of total production by the value of all factors used in production, each in terms of constant dollar values.

Appendix table 9.- Roughage-consuming livestock: Animal units fed in year beginning October 1, 13 range sheep States, native sheep States, and United States, 1919-20 to 1952-53

Year beginning October 1	13 range sheep States	Native States	United States
	Thousand units	Thousand units	Thousand units
1919-20	26,577	49,714	76,291
1920-21	26,148	48,618	74,766
1921-22	26,034	48,537	74,571
1922-23	25,639	48,054	73,693
1923-24	25,392	47,399	72,791
1924-25	24,952	46,194	71,146
1925-26	24,292	45,051	69,343
1926-27	23,852	43,872	67,724
1927-28	23,871	43,366	67,237
1928-29	24,333	43,821	68,154
1929-30	24,863	44,492	69,355
1930-31	25,426	45,311	70,737
1931-32	25,591	46,685	72,276
1932-33	26,497	48,131	74,628
1933-34	27,746	49,610	77,356
1934-35	25,323	47,290	72,613
1935-36	24,933	46,401	71,334
1936-37	24,858	44,830	69,688
1937-38	24,223	44,133	68,356
1938-39	23,783	44,408	68,191
1939-40	24,487	45,576	70,063
1940-41	25,321	46,837	72,158
1941-42	26,734	48,481	75,215
1942-43	27,709	50,497	78,206
1943-44	28,176	51,768	79,944
1944-45	27,660	51,066	78,726
1945-46	26,624	48,630	75,254
1946-47	25,305	47,196	72,501
1947-48	24,262	44,747	69,009
1948-49	23,427	43,766	67,193
1949-50	23,171	44,063	67,234
1950-51	24,116	45,191	69,307
1951-52	25,122	47,104	72,226
1952-53	25,686	49,436	75,122

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Appendix table 10.- Percentage distribution of mill consumption of apparel wool, by grades, United States, 1921 to 1952

Year	64's and finer	58's, 60's	56's	48's, 50's	46's and coarser	Total
	Percent	Percent	Percent	Percent	Percent	Percent
1921	25.3	16.1	22.0	32.2	4.4	100.0
1922	20.7	15.4	25.1	33.6	5.2	100.0
1923	22.6	14.2	24.0	32.7	6.5	100.0
1924	26.6	14.9	23.2	26.4	8.9	100.0
1925	26.5	15.3	23.3	26.0	8.9	100.0
1926	23.9	15.3	24.0	25.3	11.5	100.0
1927	27.7	15.8	21.4	21.9	13.2	100.0
1928	29.0	17.7	21.2	22.1	10.0	100.0
1929	31.4	17.6	20.5	19.8	10.7	100.0
1930	37.5	18.2	17.6	17.4	9.3	100.0
1931	35.2	19.2	20.8	16.4	8.4	100.0
1932	34.5	20.3	20.5	17.7	7.0	100.0
1933	37.1	17.8	19.9	16.3	8.9	100.0
1934	32.6	17.2	22.8	17.8	9.6	100.0
1935	38.1	15.4	23.0	16.7	6.8	100.0
1936	36.7	14.2	21.4	15.9	11.8	100.0
1937	38.4	13.1	21.3	14.8	12.4	100.0
1938	41.4	13.3	22.1	16.3	6.9	100.0
1939	42.4	13.3	21.8	14.5	8.0	100.0
1940	44.5	14.9	19.1	13.9	7.6	100.0
1941	43.2	15.1	18.6	12.8	10.3	100.0
	60's and finer		50's up to 60's		48's and coarser	
1942	52.5		34.4		13.1	100.0
1943	46.5		42.4		11.1	100.0
1944	46.6		41.9		11.5	100.0
1945	47.8		41.9		10.3	100.0
1946	54.9		31.2		13.9	100.0
1947	62.2		25.6		12.2	100.0
1948	62.6		26.9		10.5	100.0
1949	54.6		35.4		10.0	100.0
1950	56.3		34.5		9.2	100.0
1951	58.5		32.8		8.7	100.0
1952	51.2		35.8		13.0	100.0

Percentages for years prior to 1938 are based on reports covering 75 to 80 percent of the industry.

Derived from reports of the Bureau of the Census.

Appendix table 11.- Percentage distribution of apparel wool consumption on worsted and woolen systems, United States, 1921 to 1952

Year	System		
	Worsted	Woolen 1/	Total
	Percent	Percent	Percent
1921	68	32	100
1922	65	35	100
1923	68	32	100
1924	65	35	100
1925	68	32	100
1926	71	29	100
1927	70	30	100
1928	68	32	100
1929	73	27	100
1930	75	25	100
1931	77	23	100
1932	74	26	100
1933	75	25	100
1934	66	34	100
1935	69	31	100
1936	68	32	100
1937	67	33	100
1938	67	33	100
1939	69	31	100
1940	66	34	100
1941	64	36	100
1942	54	46	100
1943	48	52	100
1944	50	50	100
1945	50	50	100
1946	57	43	100
1947	64	36	100
1948	66	34	100
1949	59	41	100
1950	67	33	100
1951	59	41	100
1952	54	46	100

1/ Consumption of raw wool on the cotton and other systems of spinning is included in consumption on the woolen system in 1945 and earlier years but not in later years. Consumption on the woolen system includes consumption in batting and felt manufactures in 1946 and earlier years but not in later years.

Derived from reports of the Bureau of the Census.

Appendix table 12.- Apparel Wool: United States production, imports, and mill consumption (scoured basis), 1923 to 1952

Year	Production 1/	Imports 2/	Production plus imports	Mill consumption 3/
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
1923	133.1	161.7	294.8	311.3
1924	137.7	75.7	213.4	249.7
1925	146.5	98.6	245.1	251.7
1926	155.7	104.0	259.7	254.7
1927	164.9	77.3	242.2	258.7
1928	177.4	47.3	224.7	232.4
1929	185.1	60.6	245.7	253.2
1930	201.4	46.1	247.5	200.7
1931	215.1	23.4	238.5	237.7
1932	204.8	8.9	213.7	188.5
1933	212.8	23.2	236.0	245.5
1934	207.7	18.4	226.1	167.6
1935	208.6	26.9	235.5	319.0
1936	205.1	69.9	275.0	299.8
1937	206.3	90.5	296.8	274.2
1938	206.7	19.6	226.3	219.6
1939	207.5	58.5	266.0	293.1
1940	210.2	118.4	328.6	310.0
1941	219.9	334.7	554.6	514.4
1942	220.9	457.1	678.0	560.5
1943	215.6	397.4	613.0	603.3
1944	204.0	344.9	548.9	577.0
1945	188.4	418.0	606.4	589.2
1946	169.6	473.0	642.6	609.6
1947	153.1	259.3	412.4	525.9
1948	136.9	246.2	383.1	485.2
1949	120.4	154.9	275.3	339.0
1950	119.1	250.1	369.2	436.9
1951	118.7	272.0	390.7	382.1
1952 4/	127.4	248.4	375.8	346.8

1/ Rough approximation of clean content of domestic production, actual weight, as reported by the Agricultural Estimating Service, USDA, based on estimated average clean yield of 44 percent for shorn wool and 75 percent for pulled wool. These yields are based on an analysis of the 1946 clip. It should be recognized that yields vary from year to year and over a period of time with areas, weather conditions, breed, and other factors.

- Continued -

Appendix table 12.- Apparel Wool: United States production, imports, and mill consumption (scoured basis), 1923 to 1952
- Continued -

2/ Imports for consumption. Data for 1923-41 include all foreign wool except Donskoi, Smyrna, East Indian, Chinese, and similar native or unimproved wools particularly suitable for floor coverings. Data for these years include a small quantity of duty-free wool and exclude a small quantity of dutiable wool. Data for later years include all dutiable wool and exclude all duty-free wool.

3/ Raw wool consumption on the cotton and other spinning systems (other than woolen and worsted) is not included in 1946 and later years. It is included in prior years. Data include consumption in batting and felt manufactures in 1946 and earlier years but not in later years. Prior to 1942 wool was considered as consumed when carded or otherwise advanced beyond scouring or raw stock dyeing. Beginning January 1942, wool was considered as consumed (1) on the woolen system when laid in mixes and (2) on the worsted system when entering scouring bowls. From August 1948 forward consumption on the worsted system is taken as the sum of top and noil production. Data include domestic and for 1923-41 all foreign wool except Donskoi, Smyrna, East Indian, Chinese, and similar native or unimproved wools; data for later years include all dutiable foreign wool and exclude all duty-free foreign wool.

4/ Preliminary.

Import and consumption data compiled from reports of the Department of Commerce.

Appendix table 13.- Mill consumption of cotton, wool, rayon and acetate, other man-made fiber, flax, and silk, United States, 1921 to 1952

Year	Cotton 1/	Wool 2/			Rayon and acetate 3/	Other man-made 3/	Flax 4/	Silk 5/	Total
		Apparel	Carpet	Total					
	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.
1921	2,600.6	299.7	43.7	343.4	19.8		8.8	51.8	3,024.4
1922	2,911.3	312.8	93.7	406.5	24.7		12.2	57.8	3,412.5
1923	3,122.6	311.3	111.1	422.4	32.5		15.4	61.5	3,654.4
1924	2,636.5	249.7	92.5	342.2	42.2		8.5	59.6	3,089.0
1925	3,075.3	251.7	98.2	349.9	58.2		12.6	76.0	3,572.0
1926	3,213.5	254.7	88.0	342.7	60.6		16.2	76.9	3,709.9
1927	3,590.1	258.7	95.4	354.1	100.0		11.4	85.0	4,140.6
1928	3,187.0	232.4	100.8	333.2	100.5		13.6	87.2	3,721.5
1929	3,425.3	253.2	114.9	368.1	133.4		14.0	96.8	4,037.6
1930	2,616.6	200.7	62.5	263.2	118.8		15.6	80.6	3,094.8
1931	2,654.9	237.7	73.3	311.0	158.9		7.2	87.5	3,219.5
1932	2,463.7	188.5	41.6	230.1	155.3		7.8	74.8	2,931.7
1933	3,050.7	245.5	71.6	317.1	217.2		10.2	70.4	3,665.6
1934	2,659.5	167.6	62.1	229.7	196.9		10.9	60.4	3,157.4
1935	2,755.4	319.0	98.5	417.5	259.1		12.6	72.4	3,517.0
1936	3,471.4	299.8	106.3	406.1	322.4		13.1	67.5	4,280.5
1937	3,646.6	274.2	106.6	380.8	304.7		14.2	64.2	4,410.5
1938	2,918.3	219.6	64.9	284.5	329.4		3.9	57.1	3,593.2
1939	3,628.6	293.1	103.4	396.5	458.8		14.4	55.3	4,553.6
1940	3,959.1	310.0	97.9	407.9	482.0	5.0	12.1	47.6	4,913.7
1941	5,192.1	514.4	133.6	648.0	591.8	12.0	9.7	25.6	6,479.2
1942	5,633.1	560.5	43.1	603.6	620.8	24.0	23.0	0.2	6,904.7
1943	5,270.6	603.3	32.9	636.2	656.1	38.0	13.6	7/	6,614.5
1944	4,790.4	577.0	45.8	622.8	704.8	48.0	9.5	7/	6,175.5
1945	4,515.8	589.2	55.9	645.1	769.9	51.0	7.4	1.0	5,990.2
1946	4,809.1	609.6	127.9	737.5	875.5	56.0	12.6	13.5	6,504.2
1947	4,665.6	525.9	172.3	698.2	987.9	50.0	8.8	3.2	6,413.7
1948	4,463.5	485.2	207.9	693.1	1,149.6	72.0	5.5	7.4	6,391.1
1949	3,839.1	339.0	161.4	500.4	993.4	92.0	6.1	4.0	5,435.0
1950	4,682.7	436.9	197.9	634.8	1,351.4	141.0	10.9	10.5	6,831.3
1951	4,850.4	382.1	102.0	484.1	1,276.1	205.0	11.1	7.2	6,833.9
1952 6/	4,482.6	346.8	119.6	466.4	1,214.7	257.8	6.7	12.6	6,440.8

1/ Mill consumption as reported by the Bureau of the Census. For American cotton, tare of 22 pounds was deducted from gross weight of bale produced through 1923; for 1924 and thereafter tare as reported by the Crop Reporting Board has been deducted. For foreign cotton, 3 percent (15 pounds) was deducted.

2/ Mill consumption, scoured basis, as reported by the Bureau of the Census.

3/ Domestic shipments plus imports for consumption as published in Textile Organon.

4/ Imports and estimated production as reported by the Bureau of the Census, Bureau of Plant Industry, and Portland, Oregon, office of Bureau of Agricultural Economics.

5/ Net imports through 1933; imports for consumption as reported by the Bureau of the Census for 1934 and thereafter.

6/ Preliminary.

7/ Less than 50,000 pounds.

Appendix table 14.- Per capita mill consumption of cotton, wool, rayon and acetate, other man-made fiber, flax, and silk, United States, 1921 to 1952

Year	Cotton 1/	Wool 2/			Rayon and acetate 3/	Other man-made 3/	Flax 4/	Silk 5/	Total
		Apparel	Carpet	Total					
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
1921	23.62	2.72	0.40	3.12	0.18		0.08	0.47	27.47
1922	26.09	2.80	.84	3.64	.22		.11	.52	30.58
1923	27.51	2.74	.98	3.72	.29		.14	.54	32.20
1924	22.79	2.16	.80	2.96	.36		.07	.52	26.70
1925	26.17	2.14	.84	2.98	.50		.11	.65	30.41
1926	27.00	2.14	.74	2.88	.51		.14	.65	31.18
1927	29.74	2.14	.79	2.93	.83		.09	.70	34.29
1928	26.08	1.90	.82	2.72	.82		.11	.71	30.44
1929	27.74	2.05	.93	2.98	1.08		.11	.78	32.69
1930	20.97	1.61	.50	2.11	.95		.13	.65	24.81
1931	21.10	1.89	.58	2.47	1.26		.06	.70	25.59
1932	19.46	1.49	.33	1.82	1.23		.06	.59	23.16
1933	23.96	1.93	.56	2.49	1.71		.08	.55	28.79
1934	20.76	1.31	.48	1.79	1.54		.09	.47	24.65
1935	21.36	2.47	.76	3.23	2.01		.10	.56	27.26
1936	26.74	2.31	.82	3.13	2.48		.10	.52	32.97
1937	27.92	2.10	.82	2.92	2.33		.11	.49	33.77
1938	22.18	1.67	.49	2.16	2.50		.03	.43	27.30
1939	27.34	2.21	.78	2.99	3.46		.11	.42	34.32
1940	29.55	2.31	.73	3.04	3.60	0.04	.09	.36	36.68
1941	38.37	3.80	.99	4.79	4.37	.09	.07	.19	47.88
1942	41.21	4.10	.32	4.42	4.54	.18	.17	7/	50.52
1943	38.03	4.35	.24	4.59	4.73	.27	.10	7/	47.72
1944	34.14	4.11	.33	4.44	5.02	.34	.07	7/	44.01
1945	31.85	4.16	.39	4.55	5.43	.36	.05	.01	42.25
1946	33.54	4.25	.89	5.14	6.11	.39	.09	.09	45.36
1947	31.93	3.60	1.18	4.78	6.76	.34	.06	.02	43.89
1948	30.02	3.26	1.40	4.66	7.73	.48	.04	.05	42.98
1949	25.37	2.24	1.07	3.31	6.57	.61	.04	.03	35.93
1950	30.45	2.84	1.29	4.13	8.79	.92	.07	.07	44.43
1951	30.99	2.44	.65	3.09	8.15	1.31	.07	.05	43.66
1952 6/	28.16	2.18	.75	2.93	7.63	1.62	.04	.08	40.46

For footnotes 1-6, see Appendix table 13.

7/ Less than 0.005 pounds.

Appendix table 15.- Percentage distribution of mill consumption of cotton, wool, rayon and acetate, other man-made fiber, flax, and silk, United States, 1921 to 1952

Year	Cotton 1/	Wool 2/			Rayon and acetate 3/	Other man-made 3/	Flax 4/	Silk 5/	Total
		Apparel	Carpet	Total					
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1921	86.0	10.0	1.4	11.4	0.6		0.3	1.7	100.0
1922	85.3	9.2	2.7	11.9	.7		.4	1.7	100.0
1923	85.4	8.6	3.0	11.6	.9		.4	1.7	100.0
1924	85.4	8.1	3.0	11.1	1.3		.3	1.9	100.0
1925	86.1	7.1	2.7	9.8	1.6		.4	2.1	100.0
1926	86.6	6.8	2.4	9.2	1.6		.5	2.1	100.0
1927	86.7	6.3	2.3	8.6	2.4		.3	2.0	100.0
1928	85.7	6.2	2.7	8.9	2.7		.4	2.3	100.0
1929	84.9	6.3	2.8	9.1	3.3		.3	2.4	100.0
1930	84.5	6.5	2.0	8.5	3.9		.5	2.6	100.0
1931	82.5	7.4	2.3	9.7	4.9		.2	2.7	100.0
1932	84.0	6.5	1.4	7.9	5.3		.3	2.5	100.0
1933	83.2	6.7	2.0	8.7	5.9		.3	1.9	100.0
1934	84.2	5.3	2.0	7.3	6.2		.4	1.9	100.0
1935	78.4	9.0	2.8	11.8	7.4		.4	2.0	100.0
1936	81.1	7.0	2.5	9.5	7.5		.3	1.6	100.0
1937	82.7	6.3	2.4	8.7	6.9		.3	1.4	100.0
1938	81.2	6.1	1.8	7.9	9.2		.1	1.6	100.0
1939	79.7	6.4	2.3	8.7	10.1		.3	1.2	100.0
1940	80.6	6.3	2.0	8.3	9.8	0.1	.2	1.0	100.0
1941	80.1	7.9	2.1	10.0	9.1	.2	.2	.4	100.0
1942	81.6	8.1	.6	8.7	9.0	.4	.3	7/	100.0
1943	79.7	9.1	.5	9.6	9.9	.6	.2	7/	100.0
1944	77.5	9.4	.7	10.1	11.4	.8	.2	7/	100.0
1945	75.4	9.9	.9	10.8	12.8	.9	.1	7/	100.0
1946	73.9	9.3	2.0	11.3	13.5	.9	.2	.2	100.0
1947	72.8	8.2	2.7	10.9	15.4	.8	.1	7/	100.0
1948	69.8	7.5	3.3	10.8	18.0	1.2	.1	.1	100.0
1949	70.6	6.2	3.0	9.2	18.3	1.7	.1	.1	100.0
1950	68.5	6.4	2.9	9.3	19.7	2.1	.2	.2	100.0
1951	70.9	5.6	1.5	7.1	18.6	3.1	.2	.1	100.0
1952 6/	69.6	5.3	1.9	7.2	18.9	4.0	.1	.2	100.0

For footnotes 1-6, see Appendix table 13.

7/ Less than 0.05 percent.

Appendix table 16.- Percentage distribution of production of sweaters, knit jackets, and jerseys, by fiber content and type, United States, 1948 to 1951

Class and product	1948	1949	1950	1951
	Percent	Percent	Percent	Percent
Men's	100.0	100.0	100.0	100.0
All-wool	77.9	76.4	76.0	71.1
Part-wool				
25 percent or more wool	6.9	6.5	9.3	10.3
Other	15.2	17.1	14.7	18.6
Women's				
Sweaters and jerseys	100.0	100.0	100.0	100.0
All-wool	74.8	68.8	64.2	58.9
All-nylon	25.2	31.2	28.7	31.4
Other			7.1	9.7
Cardigans	100.0	100.0	100.0	100.0
All-wool	91.3	85.7	85.9	74.7
All-nylon	8.7	14.3	7.8	15.7
Other			6.3	9.6
Boys'	100.0	100.0	100.0	100.0
All-wool	73.7	69.2	64.7	47.4
Part-wool				
25 percent or more wool	7.7	9.3	9.0	11.5
Other	18.6	21.5	26.3	41.1
Girls'	100.0	100.0	100.0	100.0
All-wool	97.5	90.4	79.8	69.9
All-nylon	2.5	9.6	16.9	24.5
Other			3.3	5.6
Children's	100.0	100.0	100.0	100.0
All-wool	78.7	75.6	62.0	50.3
Other	21.3	24.4	38.0	49.7
Infants'	100.0	100.0	100.0	100.0
All-wool	85.0	75.0	73.5	64.9
Other	15.0	25.0	26.5	35.1

Compiled from reports of the Bureau of the Census.

Appendix table 17.- Cuttings of specified items of men's tailored clothing and percentage distribution by fiber content, United States, 1946 to 1952

Type of garment	Unit	1946	1947	1948	1949	1950	1951	1952
Suits, total	1,000 units	23,135	25,723	23,412	19,497	23,695	19,491	19,306
Regular-weight	do.	20,014	21,732	19,104	15,824	19,110	15,168	15,059
50 percent or more wool 1/	Percent	--	--	--	--	98.3	92.5	91.7
Other	do.	--	--	--	--	1.7	7.5	8.3
Summer-weight	1,000 units	2,121	3,991	4,308	3,673	4,585	4,323	4,247
50 percent or more wool 1/	Percent	72.2	72.3	66.2	54.1	49.2	34.9	27.5
Cotton	do.	27.8	7.6	33.8	45.9	50.8	65.1	72.5
Rayon	do.		20.1					
Separate dress and sport trousers	1,000 units	41,796	42,750	37,742	38,533	46,998	38,858	45,864
50 percent or more wool 1/	Percent	54.8	61.7	60.3	51.2	45.3	30.8	32.3
Rayon	do.	26.0	24.5	29.3	39.8	48.6	63.5	61.7
Cotton	do.	19.2	13.8	10.4	9.0	6.1	5.7	6.0
Separate coats	1,000 units	6,452	4,458	4,865	5,767	7,039	--	--
50 percent or more wool 1/	do.	90.7	81.4	--	--	--	--	--
Cotton	Percent	7.8	16.5	--	--	--	--	--
Rayon	do.	1.5	2.1	--	--	--	--	--
Overcoats and topcoats	1,000 units	7,941	7,233	6,194	5,628	6,550	5,514	5,312
Overcoats	do.	--	--	--	--	--	1,335	1,002
Topcoats	do.	--	--	--	--	--	4,179	4,310

1/ 25 percent or more wool prior to 1951.

Compiled from reports of the Bureau of the Census.

Appendix table 18.- Cuttings of specified items of women's, misses', and juniors', outerwear and percentage distribution by fiber content, United States, 1946 to 1952

Type of garment	Unit	1946	1947	1948	1949	1950	1951	1952
Dresses (unit-priced)	Thousands	134,185	127,592	134,951	154,366	139,607	138,558	139,766
Rayon and acetate	Percent	78.9	81.1	81.6	74.6	72.0	69.7	66.9
Cotton	do.	13.8	10.9	13.6	19.7	21.3	23.5	24.8
Nylon	do.)						0.8	2.4
Wool	do.)	7.3	8.0	4.8	5.7	6.7	3.6	3.7
Other	do.)						2.4	2.2
Skirts (dozen-priced)	Thousands	21,540	23,736	34,884	53,268	57,408	54,720	62,352
Rayon and acetate	Percent	25.7	44.4	51.1	47.2	41.9	44.6	43.6
Cotton	do.	5.7	7.1	10.7	25.3	29.9	31.3	31.1
Nylon	do.)						0.8	0.5
Wool	do.)	68.6	48.5	38.2	27.5	28.2	22.8	23.4
Other	do.)						0.5	1.4
Suits (unit-priced)	Thousands	17,491	14,091	14,963	16,652	18,048	18,178	16,365
Rayon and acetate	Percent	9.5	11.1	20.1	34.4	41.6	59.7	62.5
Cotton	do.	1.4	2.3	3.5	1.6	1.8	1.5	2.8
Wool	do.)	89.1	86.6	76.4	64.0	56.6	37.8	33.9
Other	do.)						1.0	0.8
Untrimmed coats (unit-priced)	Thousands	20,139	18,690	22,936	23,571	22,598	21,995	23,338
Rayon and acetate	Percent	1.5	0.9	1.2	3.8	9.5	22.1	13.1
Cotton	do.	0.7	0.5	0.4	0.6	1.4	1.2	1.2
Wool	do.)	97.8	98.6	98.4	95.6	89.1	76.5	85.5
Other	do.)						0.2	0.2
Fur-trimmed coats (unit-priced)	Thousands	1,685	1,923	2,368	2,044	2,105	1,907	1,717
Rayon and acetate	Percent						7.3	7.2
Cotton	do.						(	(
Wool	do.						(92.7	(92.8
Other	do.						(	(

Compiled from reports of the Bureau of the Census.

Appendix table 19.- Percentage distribution of specified items of children's and infants' outerwear by fiber content, United States, 1948 to 1951

Item	1948	1949 1/	1950	1951
	Percent	Percent	Percent	Percent
Coats (including capes and reversibles)	100.0	100.0	100.0	100.0
Cotton	2.9	2.9	3.5	3.8
Rayon and acetate	2.6	2.9	8.0	15.5
Wool and other	94.5	94.2	88.5	80.7
Coat -and-legging and coat-and-snow pants	100.0	100.0	100.0	100.0
Cotton	1.3	1.2	3.1	5.0
Rayon and acetate	---	0.1	1.4	5.8
Wool and other	98.7	98.7	95.5	89.2
Ski and snow suits	100.0	100.0	100.0	100.0
Cotton	43.7	36.9	32.7	25.6
Rayon and acetate	9.3	15.6	30.8	42.6
Wool and other	47.0	47.5	36.5	31.8
Ski and snow pants and leggings	100.0	100.0	100.0	100.0
Cotton	14.1	26.5	16.6	26.3
Rayon and acetate	--	0.1	1.6	0.7
Wool and other	85.9	73.4	81.8	73.0
Suits (except ski and snow suits and slack suits)	100.0	100.0	100.0	100.0
Cotton	11.2	15.6	25.0	23.1
Rayon and acetate	--	16.3	33.2	55.2
Wool and other	88.8	68.1	41.8	21.7
Skirts	--	100.0	100.0	100.0
Cotton	--	36.8	40.7	40.1
Rayon and acetate	--	5.6	10.7	16.1
Wool and other	--	57.6	48.6	43.8
Slacks	100.0	100.0	100.0	100.0
Cotton	77.6	82.0	83.6	84.2
Rayon and acetate	(22.4	1.5	3.5	8.5
Wool and other	(	16.5	12.9	7.3
Slack suits	100.0	100.0	100.0	100.0
Cotton	89.7	85.4	66.4	72.6
Rayon and acetate	(10.3	3.8	10.0	13.3
Wool and other	(	10.8	23.6	14.1
Jackets	100.0	100.0	100.0	100.0
Cotton	70.4	72.3	79.7	64.9
Rayon and acetate	--	0.5	8.5	23.1
Wool and other	29.6	27.2	11.6	12.0

1/ Derived from preliminary data.

Derived from reports of the Bureau of the Census.

Appendix table 20.- Prices per pound of wool, and other textile fibers, United States, 1921 to 1952

Year	Wool 1/	Cotton 2/	Rayon 3/	Acetate 4/
	Cents	Cents	Cents	Cents
1921	85.0	14.6		
1922	125.0	20.9		
1923	141.0	29.3		
1924	141.2	28.6		
1925	139.0	23.7		
1926	116.2	17.4		
1927	110.3	17.6		
1928	116.1	19.9		
1929	98.1	19.0	60.0	
1930	76.2	13.2	60.0	
1931	63.1	8.2	57.6	
1932	47.0	6.3	45.8	
1933	67.1	8.5	40.0	
1934	81.6	12.4	34.6	
1935	74.8	12.1	34.0	
1936	92.0	12.3	30.4	5/ 65.1
1937	101.9	11.8	27.1	52.2
1938	70.4	9.0	25.0	46.5
1939	82.7	9.3	25.0	46.0
1940	96.3	10.2	25.0	43.0
1941	108.8	13.9	25.0	43.0
1942	119.1	19.3	25.0	43.0
1943	117.8	20.6	24.0	43.0
1944	119.0	21.2	24.4	41.9
1945	117.7	22.6	25.0	38.0
1946	102.6	30.6	25.4	39.1
1947	124.2	34.4	31.9	47.9
1948	164.6	33.8	36.4	48.0
1949	166.4	31.6	35.8	43.0
1950	199.2	36.2	36.1	42.5
1951	270.5	41.4	40.0	48.0
1952	165.3	38.8	39.5	42.4

1/ Territory fine good French combing and staple, scoured basis, Boston.
2/ Middling 15/16".
3/ Viscose 1½ denier.
4/ 5 denier.
5/ April-December average.

Compiled from reports and publications of Bureau of Labor Statistics, Textile Economics Bureau, and United States Department of Agriculture.

Appendix table 21.- APPAREL WOOL: Estimated world supply and disposition, average 1934-39 and 1940-45; and annual 1945-46 through 1952-53 season (grease basis)

Year 1/	Supply			Disposition	
	Carry-in stocks	Production	Total	Consumption	Closing stock
	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.
1934-39 avg.	1,825	2,991	4,816	3,103	1,713
1940-45 avg.	2,961	3,291	6,252	2,580	3,672
1945-46	5,357	2,964	8,321	3,299	5,022
1946-47	5,022	2,982	8,004	3,530	4,474
1947-48	4,474	2,931	7,408	3,854	3,551
1948-49	3,551	2,965	6,516	3,528	2,988
1949-50	2,988	3,100	6,088	3,960	2,128
1950-51	2,128	3,115	5,243	3,384	1,859
1951-52	1,859	3,190	5,049	3,060	1,989
1952-53	1,989	3,320	5,309	3,300	2,009
1953-54	2,009	--	--	--	--

1/ Stocks are for July 1: Consumption applies to calendar year beginning halfway through the season; i.e. 1951-52 refers to consumption in 1952.

Foreign Agriculture Service.

Appendix table 22.- Number of grazing units of livestock on farms and ranches in comparison with the number permitted on the national forests, 11 Western States, selected years, 1912 to 1953

Year	Grazing units of livestock on farms, 11 Western States, Jan. 1, 1/			Grazing units of livestock permitted on the national forests 1/ 2/		
	Sheep and lambs 3/	Cattle, horses and mules	Total	Sheep and goats	Cattle and horses	Total
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
1912	5,076	10,105	15,181	1,510	1,425	2,935
1915	4,620	12,613	17,233	1,457	1,680	3,137
1918	4,529	15,506	20,035	1,702	2,180	3,882
1920	4,284	14,325	18,609	1,463	2,052	3,515
1923	3,744	13,292	17,036	1,341	1,806	3,147
1925	3,963	12,115	16,078	1,233	1,553	2,786
1930	5,009	10,419	15,428	1,339	1,372	2,711
1931	5,231	10,607	15,838	1,317	1,386	2,703
1935	4,707	11,283	15,990	1,135	1,358	2,493
1940	4,262	10,431	14,693	988	1,185	2,173
1942	4,410	11,724	16,134	948	1,189	2,137
1945	3,423	13,010	16,433	774	1,186	1,960
1947	2,701	12,339	15,040	677	1,139	1,816
1948	2,566	12,171	14,737	661	1,129	1,790
1949	2,436	12,306	14,742	616	1,101	1,717
1950	2,306	11,992	14,298	599	1,066	1,665
1951	2,370	12,724	15,094	600	1,060	1,660
1952	2,509	13,950	16,459	598	1,069	1,667
1953	2,529	14,651	17,180	--	--	--

1/ A grazing unit of livestock as used in this table equals 1 horse, 1 mule, 1 head of cattle and calves, excluding milk cows, or 5 head of sheep and lambs.

2/ Animals under 6 months of age are not included in these figures since they graze free of charge with the other livestock.

3/ Excludes sheep and lambs on feed.